FALL OF THE FIGHTER GENERALS:

THE FUTURE OF USAF LEADERSHIP

BY

WM BRUCE DANSKINE

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APPROVAL

The undersigned certify that his thesis meets masters-level standards of research, argumentation, and expression.

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David R. Mets

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John G. Terino

About the Author

Major Wm. Bruce "Moose" Danskine was commissioned as a distinguished graduate through the Reserve Officer Training Corps at Oregon State University in 1988. Graduating number one in his class from Specialized Undergraduate Navigator Training in 1990, he went on to fly the

RC-135V/W "RIVET JOINT" as an electronic warfare officer. He has served as a senior navigator, electronic warfare officer, mission director, and tactical coordinator in the RC-135V/W, accumulating over 3900 flying hours. Major Danskine has flown 273 operational reconnaissance, combat and combat support missions, including ISR sorties flown in Operations Provide Promise, Southern Watch, Deny Flight, Vigilant Warrior, Decisive Endeavor, and Allied Force. He has also served as chief of weapons systems and tactics integration for the RIVET JOINT program, and chief of combat operations for the 55th Wing, Offutt AFB, NE. Major Danskine is a 1996 outstanding graduate of the U.S. Air Force Weapons School. He also has a bachelor's degree in Civil Engineering from Oregon State University, a master's degree in Public Administration from the University of Oklahoma, and a master's degree in Military Operational Art and Science as a distinguished graduate from the USAF Air Command and Staff College. In July 2001, Major Danskine was assigned to US European Command as the Chief of Airborne Intelligence, Surveillance and Reconnaissance.

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Abstract

Fighter pilots dominate the senior leadership of the United States Air Force (USAF), holding 67 percent of the four-star general officer positions and commanding 63 percent of all major commands. Yet they make up only 5.3 percent of the force. Our last eight USAF Chiefs of Staff have been fighter pilots. They constitute an elite group which influences, if not outright controls, every aspect of the Air Force institution. Such dominant "elite" groups have a great deal to say about the vision, doctrine, budgeting, program priorities, and direction of any organization. Therefore, one can expect conflict among groups within any organization, all competing for influence. The belief is that if one group predominates the senior leadership, it usually controls the organization.

Colonel Michael Worden, in his groundbreaking book *Rise of the Fighter Generals,* describes how senior leadership in the USAF transformed from a group dominated by bomber pilots to one dominated by fighter pilots. Worden attempts to describe when, how, and why the shift in leadership occurred from the "bomber barons" to the "fighter mafia." Using historical data on education, equipment, and budgets, he details the environment that almost inevitably led to this transition. What he did not ask is whether this transition was a unique changing of the guard, or would there be further changes in leadership. While Worden looked back at history to explain why one transition of leadership occurred, this research will use the same indicators, plus updated data, to look forward and predict if another transition awaits the Air Force.

This study is an empirical analysis based upon organizational theory, thus we begin with a brief overview of organization and group theory. We will then review Worden's categorization system, refining it to describe the rival groups, or "tribes," as they cope with change and vie for influence within institutions like the Air Force. We will also discuss how generational differences may influence tribal dominance. When examining the institutional environment and how it might impact tribal dominance, we must examine the important indicators. Worden's indicators included education, budgets, numbers of aircraft and USAF wings, and manpower. This study will update the data for Worden's indicators from where he left off in 1982. This study will also examine doctrinal development, budget and weapon system acquisition priorities. We will observe that some indicators, such as professional military education and commissioning source, are not usable indicators of tribal dynamics. Some insight will be gained by looking at the tribal situation existing in our sister services. Finally, this study will address the question of whether a future "changing of the guard" is likely to occur in the Air Force. This research tentatively predicts that a new tribe, the "Delphic tribe", will eventually gain a preeminent position in senior USAF leadership (noting several reasons why it might *not* occur). This research concludes with several observations of whether or not this would be a desirable occurrence, and what the USAF should do to address this possible transition of leadership.

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Introduction

> *"The issue here is not whether pilots should dominate the Air Force--the fact is they do. Rather, a more interesting phenomenon is that persons who sit on top of the world's most powerful air force are almost exclusively fighter pilots; yet, their institution and its doctrine were created before World War II by bomber pilots."*
>
> —*Col Michael Worden*

Fighter pilots dominate the senior leadership of the United States Air Force (USAF), out of all proportion to their numbers within the service as a whole. Only 5.3 percent of all officers in the USAF are fighter pilots, yet they occupy 67 percent of the four-star general officer positions and command 63 percent of all major commands.[1] Our last eight USAF Chiefs of Staff have been fighter pilots. They constitute an elite group which influences, if not outright controls, every aspect of the Air Force institution.

It is important to examine such dominance. Dominant "elite" groups have a great deal to say about the doctrine, budgeting, program priorities, and direction of any organization. Conflict may exist among groups competing for influence, but if one group dominates the senior leadership, it usually controls the organization. This is not to say that such dominance by any particular group is either "good" or "bad" for the Air Force. Homogeneous groups in the senior ranks often imply a common vision or direction. Such was the case immediately following World War II when leaders advocating

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[1] All personnel information is derived from the Interactive Demographics Analysis System (IDEAS) manpower data available at the Air Force Personnel Center's official website: http://www.afpc.randolph.af.mil/sasdemog/ideas. This data is limited to O-1 through O-5 for rated officers. Information on general officer biographies is derived from USAF official biographies site at: http://www.af.mil/news/biographies.

strategic bombing led the USAF.[2] Yet such elite groups can also stifle alternative viewpoints, as many fighter pilots themselves have claimed during this same heyday of the Cold War "bomber barons."[3] One thing is clear: the proportion of fighter pilots in this service is declining, both in absolute numbers, and in percentage of serving officers relative to the rest of the Air Force. Thus the pool for future senior leadership from the existing elite group is shrinking.

Elite groups can change. New groups can wrest dominance of the institution away from the old elite. Such "changing of the guard" events often accompany a change in institutional direction. The institution often changes its internal organization to match a changing external environment. When new elite groups achieve the senior positions, they often bring with them different visions for the institution. These different visions are often accompanied by different doctrine, different budget priorities, and different acquisition programs - all reflecting the new group's core values. Transitions can be traumatic, such as when the results of World War II led to the separation of part of the Army to form an independent Air Force. Or the transition can be smooth, such as when the fighter pilots first took over the USAF from the bomber pilots in the early 1980s. Whether this transition is evolutionary or revolutionary, the institution may benefit by being able to predict whether such transitions are inevitable. We may ask ourselves, then, if it is possible to observe the institution and predict if such a leadership transition will occur in the future.

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[2] It should be noted that not all of the early USAF Chiefs of Staff were "bomber pilots." Generals Carl Spaatz, Hoyt Vandenberg, and Thomas White flew pursuit aircraft early in their careers. However, all of them commanded strategic bomber numbered air forces during World War II and were advocates of strategic bombing as opposed to close support of ground forces.

[3] "The SAC people ... have been too high on the hog for too long, and their mission has been pretty well replaced by missiles, cruise missiles and things like that." Brig Gen Frank L. Gailer, transcript of oral history interview by Lt Col Gordon F. Nelson, Lt Col John N. Dick, and Maj Jessie L. Greene, 19 January 1977, 14-5, USAF Historical Research Center, Maxwell AFB, Ala.

Research Question

This research hopes to address the question of whether fighter pilots will continue to maintain dominance of senior USAF leadership. We therefore base this research on the observation that, indeed, the fighter community currently controls much of the Air Force. Eight of twelve USAF four-star generals are pilots with a background in the fighter community (see Figure 1). Almost half, over 46 percent, of all senior leadership are fighter pilots.[4] Five of eight commanders of the major commands are fighter pilots.[5] And yet the fighter pilot community makes up only 5.3 percent of the entire officer corps.[6] Clearly, there must be some reason for this predominance (see Appendix D for the raw data).
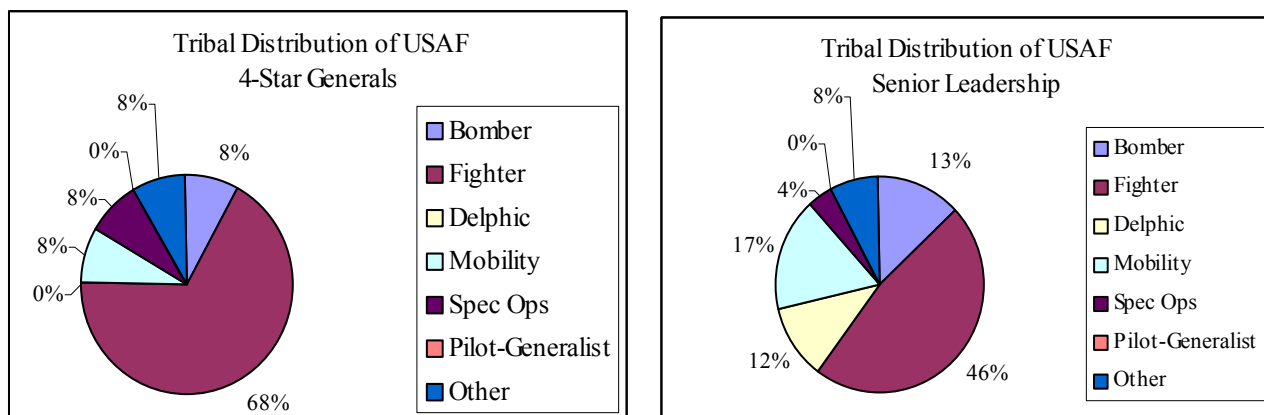
Source: USAF Biographies website.

Figure 1. Categorization of Senior USAF Leadership by Career Field

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[4] Throughout this study, "senior leadership" will be equated with three- and four-star generals of a service.

[5] These MAJCOMs include: Air Combat Command, Air Education and Training Command, Air Force Space Command, Pacific Air Forces, and US Air Forces in Europe.

[6] IDEAS FY00 data indicates 3676 officers with an 11Fxx Air Force Specialty Code (AFSC) among a total officer corps of 68752.

Colonel Michael Worden, in his groundbreaking book *Rise of the Fighter Generals,* describes how senior leadership in the USAF transformed from a group dominated by bomber pilots to one dominated by fighter pilots.[7] Worden attempts to describe when, how, and why the shift in leadership occurred from the "bomber barons" to the "fighter mafia." Using historical data on education, equipment, and budgets, he details the environment that almost inevitably led to this transition. What he did not ask is whether this transition was a one time changing of the guard, or will there be further changes in leadership? While Worden looked back at history to explain why one transition of leadership occurred, we will use the same indicators, plus updated data, to predict if another transition awaits the Air Force in its future.

As Worden himself says in his preface, "only a handful of these studies have offered a critical evaluation of air leadership, and even fewer have shown a concern for the institutional dynamics that shape air leadership." He adds such a study, and we shall add another. This study shall continue along the lines of Worden's analysis, updating the data from where Worden ended in 1982. Additionally, this study will add further "indicators" to group dominance. In the end, the research should predict whether or not a future changing of the guard can be expected and, if so, then which group will gain preeminence within the USAF.

Outline of the Study

This study is an empirical analysis based upon organizational theory, thus we begin with a brief overview of organization and group theory. We will then review Worden's categorization system, refining it to describe the rival groups, or "tribes," as

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[7] Worden's book is obviously well-regarded by the senior leadership of the USAF, as it has been on the Air Force Chief of Staff's Professional Reading List since 1999. This reading list, set forth by General Michael Ryan, will "provide insight into how and why aerospace power has become so important... [these books are] the window into the rich heritage of the U.S. Air Force." (*Air Force News* release, May 1999). It is with this in mind, although we may agree or disagree with certain points in Worden's argument, his general propositions are acceptable to USAF leadership.

they cope with change and vie for influence within institutions like the Air Force. We will also discuss how generational differences may influence tribal dominance. When examining the institutional environment and how it might impact tribal dominance, we must examine the important indicators. Worden's indicators included education, budgets, numbers of aircraft and USAF wings, and manpower. This study will update the data for Worden's indicators from where he left off in 1982. This study will also examine doctrinal development, budget and weapon system acquisition priorities. We will observe that some indicators, such as professional military education and commissioning source, are not usable indicators of tribal dynamics. Some insight will be gained by looking at the tribal situation existing in our sister services. Finally, this study will address the question of whether a future "changing of the guard" is likely to occur in the Air Force.

Categorization

Categorization is useful in highlighting the differences between groups within the Air Force. This research uses several forms of categorization, both tribal and generational. Tribes are the groups within the service that align primarily with mission and weapon system. They generally possess "cultures" that are distinctive from other tribes, and have visions or paradigms on the proper application of airpower that center on their own tribal beliefs. The "fighter pilot" mentality often described in such books as John Sherwood's *Officers in Flight Suits*, or the self-serving bravado in General Charles Horner and Tom Clancy's *Every Man A Tiger* or Chuck Yeager's *Yeager, An*

Autobiography, seem typical examples of a tribal "culture."[8] Past USAF studies have even been conducted to qualify these differences.[9]

When comparing tribes, we must often categorize officers into one of several tribes. An important assumption of this study is that officers who enter a particular career field will become acclimated to their tribe, and the tribe will subtly, yet substantially, impact the paradigms this officer possesses with respect to the military application of air power. This is a phenomenon quite common in organizational theory. This belief assumes, for example, an officer who grows up in Strategic Air Command will come to believe in the efficacy of strategic bombing. This is not to say that assignments in other career fields will not have an impact on the individual's thinking. But in today's Air Force, when exchanges between career fields are not as common as in the past, such exposure to different tribal thought is minimized. Thus we can assign tribal membership to officers by the career field upon which they first entered military service. Worden categorized his general officers as "bomber," "fighter," "generalist" (meaning multiple aircraft), or "engineer" based upon the preponderance of their experience within that specialty during the first 15 years of service.[10] I will use a similar method to categorize officers within tribes, however my tribes will consist of bomber, fighter, mobility, generalist, a new tribe called "Delphic," a tribe for special operations, and finally the "support" tribe.[11] Thus tribal membership plays a major part in this study.

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[8] For examples of the "fighter pilot" attitude, see John Darrell Sherwood, *Officers in Flight Suits* (New York: New York University Press, 1996); Tom Clancy, *Every Man a Tiger* (New York: Putnam, 1999); and Gen Chuck Yeager, *Yeager, An Autobiography* (New York: Bantam Books, 1985).

[9] Examples include the 1944 "Survey of Fighter Pilots in 8 Air Force" which compared personality characteristics of fighter and heavy bomber pilots; in 1976, USAF Chief of Staff General David C. Jones initiated "Corona Ace," a program intended to interview fighter aces to devise an ace profile for the selection and training of future fighter pilots. Both reports can be accessed at the Air Force Historical Research Agency, Maxwell AFB, AL.

[10] Worden, 18.

[11] This tribe incorporates those career fields that do not directly engage in combat operations, to include (but not limited to) the flight training, security, medical, science and research, and maintenance AFSCs. This tribe includes those career fields that are not specific to the Air Force.

Additionally, I propose there are differences along the lines of generations. This assumes that young officers entering the service will be influenced not only by their immediate tribe, but also by the combat experiences of their early career. This will, in turn, condition their way of viewing warfare. The influence that the Vietnam War had on military leaders such as Generals Colin Powell, Norman Schwartzkopf, and Charles Horner are appropriate examples.[12] Such wartime experiences will create cultural differences between generations, just as there are differences between tribes. I will describe each of these tribes and generations, and then discuss their changing roles in the Air Force.

Sources of Information

The source data for much of the findings of this research comes from official USAF databases. All personnel and manpower data is available from USAF Air Force Personnel Center. Doctrine information was derived from official USAF doctrine publications. Budget information was obtained from the Automated Budget Interactive Data Environment System (ABIDES) and personal interviews with USAF budget officers.[13] Like Worden, this research is based upon a detailed spreadsheet, tracing the careers of all current Air Force generals and all past Air Force Chiefs of Staff, compiled from the official USAF biography database. To keep all available information properly correlated, we will use 30 September 2000 (the end of Fiscal Year 2000, or FY00) as a reference point for all data, taking a "snapshot" of the institution at that time. Additional information, especially regarding "cultural opinions" and tribal assessments, are largely drawn from historical interviews housed in the USAF Historical Research Center, or

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[12] As related in the autobiographies of Gen Colin L. Powell, *My American Journey* (New York: Random House, 1995); and Gen H. Norman Schwartzkopf, *It Doesn't Take a Hero* (New York: Bantam Books, 1992); and the biography of Charles Horner by Tom Clancy, *Every Man a Tiger*).

[13] Much of the budget data relevant to this study exists only from 1962 onward, when then-Secretary of Defense Robert McNamara first introduced the Major Force Program (MFP) accounting system for Defense programs.

from autobiographies of senior leaders. Organizational and cultural theories are drawn from either the theorists' own publications, or from "academic summations" of their work.

Chapter 2

Organizational Theory

Organization and Group Theory

To study any organization such as the military, it is best to begin by briefly reviewing organization theory. The military organization of the U.S. Air Force (and that of the other military services) has often been used as the archetype of the "ideal-rational" model first praised by famed German sociologist Max Weber (1864-1920). A rational organization is based on rules and division of specialized labor, with a pyramidal hierarchy, and highly centralized power for decision making. Although the "business" may be different from what Weber envisioned, the cultural characteristics within the military are very similar to other such organizations. In the early 1900s, the work of neoclassical organizational theorists Mary Parker Follet and Chester I. Barnard expanded the concept of the organization.[14] They believed the concept of power within an organization result from conflict and the interaction of people. Whereas classical organizational theorists see power as originating from the top, neoclassical theorists see power as a dynamic interplay between leader and follower.

Group theory goes on to explain human behavior through the interaction of social groups within an organization. When a new member joins an organization, he is confronted by both formal and informal groups that often compete to provide the new member with appropriate norms of behavior. To be accepted by the group, the new member must abide by these behavioral norms. Group theorist Tamotsu Shibutane considers this to be one of the most important functions of the group.[15] Groups can issue "sanctions" to bring and keep their

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[14] Ralph C.Chandler and Jack C. Plano, *The Public Administration Dictionary* (Santa Barbara, Calif.: ABC-CLIO, Inc., 1988), 20-2, 164-5, 224-32 for discussion of Follet and Barnard's contribution to organizational theory.

[15] Ibid., 76.

members in line, including acceptance, praise, ridicule, and ostracism. These standards of behavior are often meant for group identity, to distinguish "us" from "them."

In a military context, this establishment of norms begins in the accession process; the experiences of a cadet at one of the military academies is an example. Norms can range from the formal ("a cadet will not lie, cheat or steal, or tolerate those who do") to the informal ("never tell on your bud.") Such accepted standards of behavior are incorporated in everything from language to style of decision making. And these standards, which become as natural as breathing to the newcomers, are carried with them as they progress through their career.[16] These standards may even interfere with their career performance. Imagine the difficulty a fighter pilot--raised in an environment that stresses individualism, self-reliance, and quick decision making--may face when he transitions to a weapon system that has multiple crewmembers who must work as a team with consensus-building.[17] Such tribal differences can also go beyond individual behavior patterns.

Current theorists still focus on the relationships of conflict between groups within an organization. One of the characteristics the USAF shares with other organizations is internal conflict. Peg Neuhauser, a recognized organizational conflict expert, writes of "tribes" existing within organizations who are continually competing for dominance. "Any organization with specialized functions and departments is made up of groups--which we shall call 'tribes'--that look at their work and at the organization in very different ways. They have their own dialects,

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[16] "The more a person is committed to a particular identity, 'the higher the probability of role performance consistent with the role expectations attached to that identity' and the greater the probability that he or she will seek out opportunities to perform consistent with the identity image." Volker C. Franke, "Duty, Honor, Country: The Social Identity of West Point Cadets," *Armed Forces & Society* 26, no. 2 (Winter 2000): 175-202. In her study of Canadian Airborne regiments, Donna Winslow found strong, anthropological, bonding occurred as a result of their initiation rites. "Both formal and informal experience promotes the dependence of the individual on the group." "Soldiers who were not able to meld into the Airborne group identity were excluded." Donna Winslow, "Rites of Passage and Group Bonding in the Canadian Airborne," *Armed Forces & Society* 25, no. 3 (Spring 1999): 429-57.

[17] "The fighter pilot is a rugged individualist; he doesn't take control or domination the way the bomber pilot does. The bomber pilot is a team player; he's got a team." Gen James H. Doolittle, transcript of oral history interview by Prof. Ronald Schaffer, 24 August 1979, 10, USAF Historical Research Center, Maxwell AFB, Ala.

values, histories, ways of thinking, and rules for appropriate behavior."[18] Tribes are not necessarily bad for the organization; if tribal conflict is managed well, it can create positive tension, increase morale, and protect against "group think."[19] Unfortunately, loyalty to one's tribe sometimes supersedes loyalty to the organization as a whole.[20] Often the values of a tribe do not coincide with the "umbrella values" of the organization. "If you ask employees about the most important thing in their job or department, they will answer by telling you their tribal values."[21] This complaint has often been leveled at the Air Force; officers are accused of responding to the question "What are you?" with "fighter pilot" or "missileer" rather than "Air Force officer." Dr. James M. Smith found in the responses to his USAF Culture and Cohesion survey that "40-50 percent of junior officer flyers identified themselves as pilots first--they just happened to be practicing that occupation for the USAF."[22]

This tribal loyalty continues, as members rise through the ranks of the organization. Conflicts in priorities among tribes must rise to top management for a decision. Neuhauser warns, "if the senior management person making this decision came up through the ranks of one particular tribe, then he is very likely to be almost as biased as the current tribal members."[23] Senior leaders have a difficult time transitioning from their role in the tribe to a senior level that may span several tribes. "People who have been very skillful as leaders of their own tribes can have a difficult time adjusting to this new and expanded role after they are promoted. Their

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[18] Peg C. Neuhauser, *Tribal Warfare in Organizations* (New York: Harper Business, 1988), 4. March uses the term "subunits" but the concept is the same; James G. March, *A Primer on Decision Making: How Decisions Happen* (New York: Free Press, 1994), 117.

[19] Chandler and Plano, 134. A term coined by social psychologist Irving L. Janis, group think is "a psychological process of group dynamics that prevents members of the group from realistically evaluating alternative courses of action. It occurs in highly cohesive groups in which the participants place a high value on belonging and have a strong motivation to continue as a member."

[20] "Primary group ties are likely to enhance performance and commitment to the extent that they incorporate the norms and goals of the larger military organization in which they are formed. Without such integration, cohesive groups can develop norms and goals of their own that undermine those of the larger organization." Peggy McClure and Walter Broughton. "Measuring the Cohesion of Military Communities." *Armed Forces & Society* 26, no. 3 (Spring 2000): 473-87.

[21] Neuhauser, 23.

[22] James M. Smith, *USAF Culture and Cohesion: Building an Air and Space Force for the 21st Century* (USAF Academy, Colo.: INSS, 1998), 12.

[23] Ibid., 98-9.

loyalties may stay with their original 'home' tribe, making it easy for them to see only that point of view in any dispute or planning effort."[24]

Dominant Tribes and Elite Groups

This gives rise to a dominant tribe. In any organization that has multiple specialties (for the division of labor that is central to classical organizational theory) and is a closed system that promotes from within, as the military does, there will be a tendency to produce dominant tribes.[25] These dominant tribes form the "elite profession" and define the culture, roles and mission of the institution.[26] This elite group also provides the bulk of senior leadership, controls the personnel system, and directs institution policies. The USAF elite profession, the aviators, has several "subcultures" or tribes, each competing for influence. When a common vision is shared by the various tribes, organizational conflict is at a minimum. Yet changes to the institution's external environment (new military threats, different congressional advocacy) can disrupt this internal cohesion. An altered external environment can lead to a new hierarchy of missions and thus a redistribution of power between tribes within the institution.[27] As members of new tribes gain leadership positions, and attempt to solidify their tribe's hold on the institution, they will produce "new or changed career paths to grow organizational members into future leadership positions."[28] Although James March describes this as a continual competition between the "successful" and the "ambitious,"[29] the concept is the same: two (or more) tribes will be in constant competition for dominance of the institution.

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[24] Ibid., 137.

[25] James M. Smith believes the military services maintain a strong organizational culture because they are closed systems, promoting from within. Military officers are "educated, trained, and advanced by the organization based on its internal rules and priorities." Further, the military offers "tailored professional education programs to prepare career officers to move up the chain of responsibility for the core mission, and they promote these career personnel into the decision and policymaking levels within their career elite with only limited external veto and no real external competition." James Smith, 8.

[26] Frederick C. Mosher, *Democracy and the Public Service* (New York: Oxford University Press, 1982), 122–3.

[27] Stephen P. Rosen, "New Ways of War. Understanding Military Innovation," *International Security* 13, no. 1 (Summer 1988): 141-3.

[28] James Smith, 8.

[29] March, 115.

Tribal Conflict on the Budget/Doctrine Battlefield

Both Neuhauser and Gareth Morgan identify the budget process as the battlefield upon which most tribal conflicts takes place. Control of scarce resources is a primary source of power, thus Morgan highlights that "organization politics surrounds the process of budgeting and the control and allocation of financial resources."[30] Tribes will compete for budget share, and the prestige associated with it. Therefore the budget, and the assigning of scarce resources (whether it be personnel, mission, programs, or even numbers of weapon systems) can indicate dominant tribes. "If you tell people to cooperate, negotiate, and work together smoothly, and then set up your budgets to reinforce the strict turf boundaries, you have given a mixed message ... people will usually pay much more attention to the budget message than to the cooperation message."[31]

Doctrine is also an important battlefield for tribal competition. In the military, service doctrine is the encapsulation of what that service says it believes to be true regarding its method of conducting war. Doctrine thus describes the "fundamental principles by which the military forces ... guide their actions."[32] Unfortunately, USAF doctrine has often strayed from the pure analysis of military history, and has instead reflected the external environment. "Often, doctrine is shaped significantly by the policies of the time and reflect more the influences of individuals, budgets, and emerging technological changes than the evidence of experience, critical analysis, and study."[33] Thus the USAF often uses its doctrine to justify budget battles with its sister services (and they return the favor). This was the case during the famous 1948-49 "Revolt of the Admirals" when Air Force and Navy representatives confronted each other over the B-36 and "supercarrier" programs. The advantage went to the USAF when political officials determined, in light of strict budget restraints, that the national strategy was best served by strategic bombing

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[30] Gareth Morgan, *Images of Organization* (Newbury Park, Calif.: SAGE Publications, Inc., 1986), 161.

[31] Neuhauser, 157.

[32] Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms,* 23 March 1994, as amended through 10 January 2000, 142.

[33] Lt Col Johnny R. Jones, *Development of Air Force Basic Doctrine, 1941-1992*, (Maxwell AFB, Ala.: Air University Press, 1997), vii.

and the delivery of nuclear weapons. These were considered USAF missions, as defined by its doctrine.[34]   Doctrine defined tribal preeminence, as evidenced by the post-WWII USAF doctrine's concentration on strategic bombing and nuclear forces. A focus on conventional forces, and thus the fighter tribe, has only occurred in USAF doctrine in the last few decades. This thesis will therefore trace the development of doctrine since becoming a separate service, noting the changing emphasis on tribal missions. We will also examine historical budget trends as a means for showing the relative strengths of the various USAF tribes.

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[34] Robert Frank Futrell, *Ideas, Concepts, Doctrine, vol. 1, Basic Thinking in the United States Air Force, 1907-1960* (Maxwell AFB, Ala.: Air University Press, 1989), 248.

Chapter 3

Tribes and Generations

Worden Review

Worden perceives an historical struggle for dominance within the USAF between fighter and bomber pilots.[35] He believes they think differently, they want to fight the adversary differently, and they want to buy different weapons; they are two separate "cultures." He perceives these two tribes as having a different mindset on warfare due to their different missions. Borrowing a concept from Morris Janowitz, Worden describes the bomber generals as being "absolutists" who cling to the belief that airpower (first through strategic bombing, and later relying on the use of nuclear weapons) can deter the adversary. If deterrence fails, the absolutists believe strategic airpower can be decisive in providing victory.[36] This implies the assumption that every war will be a "total war," and that we must use every means available to win. This was not a bad assumption, considering the history of two world wars and the existing specter of expanding Communism. Curtis LeMay's often-quoted suggestion that we could use nuclear weapons on the North Vietnamese to "bomb them into the Stone Age" is but one

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[35] The term "dominance" is used to describe those in senior leadership positions within the Air Force. Holding these positions implies the ability to affect doctrinal changes, budget priorities, and cultural imperatives within the service. In this study, I define "senior leadership" to be all three and four-star generals/admirals.

[36] Worden, 44. Worden's definitions are based on the Morris Janowitz concept of "absolutist" and "pragmatist," although he admits he modified the definition (see Note #76, Worden, 52). Janowitz bases his distinction on the differing professional opinions of massive versus gradual deterrence, not necessarily between fighter or bomber pilots. Janowitz does, however, describe the culture of Strategic Air Command as favoring absolutism and claims "those who have had service with the fighter and ground support forces" will generally conform to the pragmatist school. "For the absolutist, limited wars, should they occur, would represent a weakness in United States foreign policy." Morris Janowitz, *The Professional Soldier: A Social and Political Portrait* (New York: Free Press, 1960), 303-20.

example. Conversely, fighter generals are described by Worden as "pragmatists" who have grown up in the era of limited wars such as Korea and Vietnam. They realize airpower is a political tool, and that a nuclear weapon is not the answer to every military situation.[37] They accept the fact that political restraints are now a normal part of the military campaign.[38]

Worden claims that several environmental factors led to this "changing of the guard." While the "bomber barons" were running the service, they emphasized the mindset of Strategic Air Command (SAC), playing down the importance of advanced education or innovative leadership.[39] Everything was according to the checklist. Several

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[37] In describing the school of thought preferred by such "European" generals as Eisenhower, Bradley, Ridgway, and Taylor (all cultivated by General George Marshall), Janowitz says "their orientation to military policy reflected the influence of civilian political control." They relied on the strength of alliances, rather than unilateral action. Ibid., 313. Janowitz classifies generals as absolutists and pragmatists based upon their politico-military leanings, not their weapon system, as Worden often does. This may be a fairly accurate assessment, but one based upon Worden's own assessment of each general's politico-military opinions. Without personal interviews, he runs the risk of stereo-typing. Janowitz limits his own categorization of USAF officers to Curtis LeMay and Nathan Twining (as absolutists) and Elwood Quesada, Hoyt Vandenberg, Lauris Norstad, and Otto Weyland (as pragmatists). Janowitz, 316-7.

[38] Worden, 45.

[39] "SAC was particularly reluctant to send people to school..." The combat demands of WWII and Korean War, plus the rapid expansion of SAC during the post-war era, left little time for bomber pilots to attend civilian or professional military education programs. Fighter pilots had more time to devote to educational pursuits. Worden, 72-3. It is often tempting to equate the "bomber baron" mentality with the SAC mentality, but this is not always advisable. Any assumption that bomber pilots were "anti-education" may be a bit extreme. After all, "bomber barons" created the USAF Academy in 1954, and the first four superintendents were bomber pilots (Hubert R. Harmon, James E. Briggs, William S. Stone, and Robert H. Warren). Air University was also stood up after World War II under the reign of the bomber barons; until 1968, the majority of Air University commanders were bomber pilots (thereafter, almost all were fighter pilots). The primary reason for a discrepancy of school attendance may have been the opportunity offered by SAC. Although SAC established a Minuteman Education Program in 1962 for advanced degrees in engineering to missileers sitting alert, it did not meet its program potential of 350 graduates; "crippled by problems with a missile system that required a surprising amount of close attention and the lack of officers with the undergraduate prerequisites, only 15 graduated in the first group to complete the program in 1965." Vance O. Mitchell, *Air Force Officers: Personnel Policy Development, 1944-1974* (Washington, D.C.: Air Force History and Museums Program, 1996), 200. A 1959 study found "a general feeling ... that PME [Professional Military Education] did not contribute significantly to the career development of officers. That is, no clear correlation existed between PME and select job assignments, and PME and quality officership." Richard L. Davis, and Frank P. Donnini, *Professional Military Education for Air Force Officers: Comments and Criticisms* (Maxwell AFB, Ala.: Air University Press, 1991), 58-9. Although anecdotal, the author knows of many SAC bomber crewmembers who, upon being incorporated into ACC in 1992, scrambled to complete their advanced degrees and Squadron Officer School requirements in order to be competitive for promotions; SAC had not stressed this as important to an officer's career, unlike both Tactical Air Command and Air Combat Command.

external factors also impacted this internal conflict. The tactical air forces played the major roles in both Korea and Vietnam, and were conspicuously involved with the Army in developing an AirLand Battle doctrine to confront the massive Soviet Army in Europe during the late 1970s and early 1980s. Hence, strategic bombing programs were cut, and the emphasis shifted to ballistic missiles. There just was no place for the absolutist bomber generals in this new era of limited war.

Worden presents another interesting concept, namely the acculturating characteristic of the Air Force. He presumes (and most sociologists would agree) that the early years of an individual's membership in any organization are the most formative. Impressions and paradigms are created at the initial entrance into the organization that carry through for the remainder of one's career. He develops this in two directions. First, the new officer will take on the mindset of the "warfighting community" to which they now belong. Second, young officers will develop according to their "generation" or the timeframe when they first enter military service.

TRIBES

"Flying fighters if fun. Flying bombers is important."

—General Curtis E. LeMay

"Space people are interesting. By that I mean that most of them don't seem very much like us--not X-Files different, but definitely leaning toward strange."

—General Charles A. Horner

Tribal Definitions

A tribe, as defined by Neuhauser, is a community within the organization that thinks similarly, based upon a fundamental core belief, or some shared value. The military is no different, and every service has its share of tribes.[40] Officers from diverse backgrounds become acculturated to the military community early in an officer's career.[41] In the Air Force, this indoctrination process has taken place in initial flight training (or the equivalent specialty training). During the mobilization for World War II and the Korean War, two-thirds of Air Force officers received their commission through the Aviation Cadet program and not the military academies. Since this time, the major USAF commissioning source has been from the Reserve Officers Training Corps (ROTC) and Officer Training School (OTS) programs. Thus, it was initial specialty training, and not a military academy, that often became the source of military indoctrination for many USAF officers.[42] For pilots, it was pilot training that developed the tribal acculturation process; "with wings, a pilot also acquired a collection of

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[40] Army and Navy tribes will be discussed later in the study.

[41] "In the process of indoctrination, and in the effort to create a sense of professional loyalty, the cadet must learn to conform." Janowitz, 135-6.

[42] Sherwood, 37-67.

attitudes, ideas, and values that made him different from other types of officers."[43] Other

technical training schools produced similar tribal allegiances.[44]

In a service so closely associated with technology, tribal sense of self usually

aligns with technology or weapon systems.[45] Tribal culture develops around tribal

missions, which are based upon technology and weapon systems. Therefore, the young

pilot's tribal association was further defined by the tribal characteristics associated with

the particular aircraft he flew. During the early days of airpower, association with a

weapon system was a result of an almost random assignment process. Upon completion

of basic training, pilots were assigned to bombardment or pursuit (or other specialties)

based not only on skill, but also on alphabetical order, physical size, or perceived

aggressiveness.[46] Wartime requirements always trumped individual preferences. After

WWII, when tribal cultures became more distinct, flying ability and self-selection

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[43] Sherwood, 67. See also Gen Chuck Horner's experiences in flight school; Clancy, *Every Man a Tiger,* 38-46.

[44] Every USAF officer became a specialist; the results of a 1959 AFROTC study showed "increasingly, officers identified themselves as 'navigators' or 'engineers,' perhaps as 'Air Force navigators' or 'Air Force engineers,' rather than as 'Air Force officers.'" Vance Mitchell, 1996), 285. It could be argued that officers with certain personality traits self-select themselves into the pilot career field, and that it is therefore not pilot school that provides this acculturation. This theory would believe only someone with the "pilot mentality" would apply to pilot school, thus it is not the pilot school itself that forms the student. But the fact that some pilot students wash out, and later become navigators or some other specialty, seems to argue somewhat against the "self-selection" theory. Desire and capability can not necessarily be associated. It may be that certain communities will "filter out" officers with unacceptable personalities, but this again is a form of tribal acculturation.

[45] "Identity in the Air Force has become associated with a specific airplane rather than the institution or military art, with a resulting weaker sense of community than the other services. The absence of an integrating vision unleashes bad tendencies: weak ties to the institution, loyalties given to airframes or commands, and a focus on systems before missions." Carl H. Builder, *Icarus Syndrome*: *The Role of Air Power Theory in the Evolution and Fate of the U. S. Air Force* (New Brunswick, N.J.: Transaction Publishers, 1998), 6, 35. Also, "in the absence of a shared vision or sense of mission, Air Force officers turn to their occupations and immediate unit built around that occupation for their primary identification." James Smith, 14.

[46] Rebecca H. Cameron, *Training to Fly: Military Flight Training, 1907-1945* (Washington, D.C.: Air Force History and Museums Program, 1999), 325, 329, 404. "We were divided into bomber and fighter groups with the criteria being size and weight. The rules were 180 pounds and 5'10" maximum for the fighter pilot..." Gen Louis L. Wilson, Jr., transcript of oral history interview, 2 March 1977, 21, USAF Historical Research Center, Maxwell AFB, Ala.

became more important for determining which career path a pilot would take.[47]   What

follows, then, is a brief description of the current tribes within the Air Force.

Bomber Tribe.   The Bomber tribe, made up mostly of bomber aircrewmen,

represents the early USAF.   Early leaders gained their combat experience employing

strategic bombing against the homeland of the Axis powers during World War II.   Many

books, including Worden's, have done much to describe the "character" of a strategic

bomber pilot.[48]   This is the tribe upon which our earliest airpower advocates such as

Mitchell and Arnold built their arguments for an independent Unites States Air Force.

Theorists such as Douhet and Mitchell believed the advantages of aviation allowed air

forces to bypass the trench warfare and strike directly at the enemy's capability and will

to wage war.   Why fight a bloody battle on the ground, when a strategic attack at the vital

centers of the enemy's industrial heart could finish the job much quicker and more

efficiently?   Coercion of the adversary was better for achieving political objectives than

destroying his forces.[49]   With the advent of nuclear weapons, these "bomber barons"

came to believe the threat of massive annihilation of the adversary could deter both

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[47] There are several studies on self-selection versus socialization, although few specifically addressing the Air Force.   See: David R. Segal, et al., "Propensity to Serve in the U.S. Military: Temporal Trends and Subgroup Differences," *Armed Forces & Society* 25, no. 3 (Spring 1999): 407-27; Franke, "Duty, Honor, Country," 175-202;   Jerald G. Bachman, et al., "Distinctive Military Attitudes among U.S. Enlistees, 1976-1997: Self-selection versus Socialization," *Armed Forces & Society* 26, no. 4 (Summer 2000): 561-85; Joseph L. Soeters, "Value Orientations in Military Academies: A Thirteen Country Study," *Armed Forces & Society* 24, no. 1 (Fall 1997): 7-32;   Winslow, 429-57;   Robert F. Priest and Johnston Beach, "Value Changes in Four Cohorts at the U.S. Military Academy," *Armed Forces & Society* 25, no. 2 (Winter 1999): 243-65.

[48] For works on bomber aircrews and SAC, see: Chris Adams, *Inside the Cold War: A Cold Warrior's Reflections* (Maxwell AFB, Ala.: Air University Press, 1999); Sherwood, *Officers in Flight Suits*; Walton S. Moody, *Building a Strategic Air Force* (Washington, D.C.: Air Force History and Museums Program, 1996); Walter J.Boyne, *Beyond the Wild Blue: A History of the U. S. Air Force 1947-1997* (New York: St. Martin's Press, 1997); Mark Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam* (New York: Free Press, 1989); and Robert Frank Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force,* 2 vols, (Maxwell AFB, Ala.: Air University Press, 1989).

[49] As noted earlier, not all of the early USAF Chiefs of Staff were bomber pilots. However, such leaders as Carl Spaatz, Hoyt Vandenberg, and Thomas White were strong advocates of strategic bombing. They can be associated with the Bomber tribe due to their association with the "absolutist" paradigm.

general and limited war. This tribe (and their paradigm of air warfare) reached its zenith following WWII and through the early part of the Cold War.

The unique culture of the Bomber tribe results from the different flying environment of the bomber aircrew.[50] Much of the difference between the bomber and fighter tribe is the crew concept. "The fighter pilot is a rugged individualist; he doesn't take control or domination the way the bomber pilot does. The bomber pilot is a team player; he's got a team. The bomber pilot is a team player."[51] Leadership tends to be more centralized, due to the need for positive control of nuclear weapons. Cultural characteristics result from the different response to threats; fighter pilots can take a proactive role in their own defense, whereas bomber pilots often follow passive "fly high" or "go low" tactics. The mission satisfaction of dropping bombs on targets also may not be the same as scoring air-to-air kills.[52] Their mentality is represented well by Strategic Air Command (SAC).

Fighter Tribe. This is in marked contrast to the current dominant Fighter tribe. This tribe is the epitome of what civilians view as airpower: airshows and aces. The transition from bomber dominance to fighter dominance is the subject of Worden's study. Whereas General Curtis LeMay represented the ideal of SAC, General Wilbur "Bill" Creech represented Tactical Air Command, and the style of the fighter pilot. Independent, self-sufficient, competitive and chaotic; the fighter pilot was considered a

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[50] "The pilot tends to develop a different flying and combat personality when he is exposed to one type of plane or to another. In general, the flying characteristics of heavy, four engine or two engine bomber type aircraft are those of steadiness, lack of maneuverability, reliability and great power over long distance. Combat missions consume many hours and require considerable persistence and endurance. The fliers in such groups, especially the pilots, tend to fit in with these characteristics. They are usually older, more mature, steadier, and less willing to take risks and indulge in flashy maneuvers than fighter pilots." Roy R. Grinker, Sr. and John P. Spiegel, *Men Under Stress* (Philadelphia: The Blakiston Company, 1945), 27. Quoted in Worden, 8.

[51] Interview of Gen James H. Doolittle, 10. "In SAC you have a different situation. The crew must work as a closely-knit team, and they have different claims of responsibility than the fighter pilot." Robert M. DeHaven, transcript of oral history interview by Lt Col John N. Dick, Jr., 3 February 1977, 146, USAF Historical Research Center, Maxwell AFB, Ala. See also, Cameron, 405.

[52] Sherwood, 95-115.

lone warrior.[53] But this tribe is driven by more than just air-to-air kills and the white scarf wafting in the wind. The tactical air forces are closely tied to the Army in the air-to-ground role. Brigadier General Otto Weyland and XIX Tactical Air Command supporting Lt. Gen, George Patton's 3rd Army dash across Northwest Europe in WWII is the forerunner of AirLand Battle doctrine in the 1980s. General Charles Horner's original plan in support of Army maneuvers for the Gulf War was based on these same tactics. This concept assumes the primary means to achieve the desired political objectives is to defeat the means by which the adversary resists, namely his military forces. This is the strategic objective of the U.S. Army, and like-minded aviators have often found willing advocates in their land-centric counterparts. Such missions as close air support and interdiction have historically been in the domain of this tribe, thus strengthening their ties to ground forces.

Delphic Tribe. Another long-time tribe, in fact the original tribe, is reconnaissance. The earliest aviators were balloonists, who took to the air to conduct reconnaissance on the enemy's ground force disposition and movement. It was clear early on that the advantage went to the side that knew more about the disposition of enemy and friendly forces. Pursuit aviation (fighters) were developed for the purpose of protecting this central role of reconnaissance, thus achieving an early form of "dominant battlespace knowledge." In recent years, the concept has expanded well beyond mere "reconnaissance" to include a wide field of capabilities collectively termed Intelligence, Surveillance and Reconnaissance (ISR). Now, the concept of "building the battlespace picture" has expanded to include sensors and systems, both airborne and from space, that cover the entire spectrum of emissions. Satellites look for infrared indications of missile

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[53] Fighter pilots and bomber pilots "are just a different breed of cat. Fighter pilots ... tend to be very self-reliant, independent thinkers, opinionated, egotistic." Interview of Brig. Gen. Frank L. Gailer, 18, 47. See also, Clancy, *Every Man a Tiger,* for Gen. Chuck Horner's opinions of fighter pilots, and specifically 137-52 on the influence of Gen Wilbur Creech. See also, Boyne, *Beyond the Wild Blue*, 212-9, for another perspective of Creech's impact on USAF leadership.

launch, space imagery determines target positions; sensors detect electronic emissions and sound waves; positioning systems allow for precision weapon employment. Command, control, and communications systems now allow the immediate sharing of this detected information throughout the theater, enabling the entire "system" to react to new enemy actions or threats. Members of the intelligence, weather, communications, computer systems, and information operations career fields not only interpret available information of the battlespace and enemy actions, but also protect friendly capabilities to exploit this battlespace. Some may question the inclusion of these somewhat diverse career fields into a single tribe. This study does so, however, because these groups often share the same systems for sensing and dissemination of their contribution to combat. They also share the same goal to create an accurate battlespace picture of the adversary, from which commanders can properly apply force (or non-force) to achieve desired objectives. This is the tribe of "Delphics."

Mobility Tribe. A fourth Air Force tribe is the Mobility tribe, made up of the airlift and air refueling communities. This is the "youngest" tribe, since it is the only one without experience in World War I. The central role of this tribe has often been as a force multiplier, allowing other tribes to engage the enemy. But there have been several times in Air Force history where they have played a more central role. From 1942 until the end of the WWII, Air Transport Command kept the China-Burma-India route (or "the Hump") open and resupplying China's resistance forces, and keeping them in the war against Japan.[54] Another example is the Berlin Crisis of 1948-49.[55] For over a year, American and British airlift maintained a continuous airbridge into the beleaguered city, thus demonstrating our ability to win a political victory without resorting to a military confrontation. Likewise, although many focus on the destructive aspects of the Gulf War, our success was a direct result of our ability to quickly build up sufficient forces in

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[54] Lt Col Charles E. Miller, *Airlift Doctrine*, (Maxwell AFB, Ala.: Air University Press, 1988), 47-57.
[55] Miller, 175-82.

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theater to first deter, and then defeat, the enemy. Such a massive, rapid deployment of force was unprecedented in history. During the 1990s, many of our military operations around the world were not force-on-force engagements, but acts of humanitarian operations. At the lower end of the combat spectrum, transportation of supplies can play a relatively greater role than force application. Such preventive action may eliminate the conditions that are conducive to violence. The members of this tribe are experts in logistics, and the movement of equipment. They are often the "limiting factor" in operations in the sense that they are the critical link to the rest of the operation.

Special Operations. A final tribe is a hybrid of air and other military forces; special operations. This tribe, while extremely important to America's warfighting capability, will not be addressed in this study because much of their community lies outside the Air Force structure. But they are focused on the type of unconventional, asymmetric conflict we are most likely to face in the foreseeable future. Undoubtedly they will play an increasing role in future combat.

Assigning Tribal Membership

Historically, Air Force tribes have coincided with weapon systems and mission. Bomber pilots of SAC flew bombers on strategic bombing missions. Fighter pilots of TAC flew fighters as escort, air superiority, or close air support (CAS) missions. Individuals with certain personalities may self-select into different USAF communities, or at least will adapt themselves to the tribal culture they find themselves in; this reinforces one's identity with the tribe.[56] Although perhaps viewed as a subjective exercise, we must nonetheless make an attempt at categorization of officers if we are to

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[56] For example, an air-to-air squadron will fly single-seat, high-performance aircraft with the emphasis on individual skill and "pushing the edge of the envelope." This attitude will attract a certain type of officer. A missile squadron may emphasize exact adherence to checklists, stable personalities, and avoidance of "individual initiative" when it comes to mission accomplishment. The severe repercussions of any loss of control of our nuclear weapons demands strong centralized control, thus forcing the same strict adherence to procedure in the missile community that has long been associated with the strategic bombers of SAC.

trend changes in USAF senior leadership. Thus for purposes of categorization this study uses mission, crew make-up, historical ties with SAC or TAC, shared technology, and the source from which these communities draw their officers to determine tribal associations.[57] All aircraft with counterair and counterland roles will be considered part of the Fighter tribe.[58] The Bomber tribe consists of bomber units who have traditionally focused on strategic attack, although their missions now are much more diverse.[59] The Delphic tribe consists of all units focused on creating and controlling the battlespace picture, to include airborne and space ISR, command and control, electronic warfare, information operations, intelligence and weather functions.[60] The Mobility tribe is associated along lines of transport and air refueling.[61]

These tribal definitions are not new to the Air Force. This is, indeed, the way the USAF divides itself. Air Force Doctrine Document 1 (AFDD-1) *Air Force Basic Doctrine,* includes in its summation of a "new view of conflict" as follows:

> "It is the knowledge that air and space *intelligence, surveillance, and reconnaissance* systems are closely watching their activities; that long-range *bomber* and air *mobility* forces are ready to respond over intercontinental ranges with a large variety of capabilities; that land-based *fighter* and attack aircraft are available to sweep the skies and prevent movement of ground forces, which gives an adversary's leadership reason to pause and reconsider their objectives and plan of action."[62] (emphasis added)

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[57] The author suspects this assignment to different tribes will be the most contentious part of his argument. This is a judgment call, and obviously open to debate.

[58] Fighter tribe aircraft include: A-7, A-10, EA-6B, F-4, F-15, F-16, F-22, F-105, E/F-111, F-117, O-2 and OA-10 (AFSCs 11Fxx and 12Fxx).

[59] Bomber tribe aircraft include: B-1, B-2, B-47, and B-52 (AFSCs 11Bxx and 12Bxx).

[60] Delphic tribe includes a wide range of AFSCs, to include officers working in the following career fields: air battle managers, computer and communications, information operations, E-3, E-4, E-8, EC-130, RC-135, RQ-1A, RQ-4A,U-2, UV-18, space, missileer, intel, weather (AFSCs 11Rxx, 12Rxx, 13Bxx, 13Sxx, 14Nxx, 15Wxx, and 33Sxx). Plans to devise a future career field for air operations centers would eventually fall into this category.

[61] Mobility tribe aircraft include: C-5, C-9, C-17, C-21, C-130, C-141, KC-10, and KC-135 (AFSCs 11Axx, 11Txx, 12Axx, and 12Txx).

[62] Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine,* September 1997, 43.

These align with our tribal definitions. The Department of Defense budget process classifies weapon system spending into major force programs (MFPs), which align with our tribal definitions, namely: strategic attack (Bomber tribe), general purpose forces (mostly Fighter tribe), intelligence and communications (Delphic tribe), and airlift/sealift (Mobility tribe). The USAF Command Screening Board (for selecting squadron, group and wing commanders) follows a similar tribal alignment.[63] The Air Force Personnel Center also categorizes Air Force Specialty Codes (AFSCs) along similar lines. It is only necessary to break out the AFSCs to distinguish tribal membership of pilots and navigators; other career fields were easily assigned membership into tribes.[64]

Even if we could define the tribes and associate them with mission categories, it might be difficult to place individuals into these categories. It may be argued that officers transition between career fields, thus making it difficult to assign any officer to a single tribe. Yet the empirical data shows a more static association with tribes; although USAF generals have often transitioned between weapon systems, rarely have they transitioned into a different tribe.[65] Only nine of the 289 USAF generals are noted to have significant experience in multiple tribes.[66] This study uses Worden's means for

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[63] Using categories such as: AWACS/Recce, Bomber, Communications, Fighter, Information Operations, Intelligence, Mobility, and Space/Missile.

[64] This study combines pilots and navigators into the same tribes. There is a noticeable tribal preeminence that distinguishes pilots from navigators, as is apparent by the fact that only 8 of the 289 USAF generals are navigators, as opposed to 190 pilots (total USAF officer population consists of 17.5% pilots, compared to 6.4% navigators), FY00 data. However, this study assumes cultural similarities between pilots and navigators within the same weapon system are stronger than those between similar aerial rating. Thus an F-15E pilot and weapon systems officer (WSO, with a navigator rating) can be expected to share more cultural ties than would the same WSO and a KC-135 navigator. Obviously the small number of generals with a navigator rating will not substantially affect tribal comparisons at the senior level.

[65] With the notable exception of pilots having served time in trainer aircraft, such as the T-37 and T-38. This study does not consider trainers to represent a major USAF tribe, therefore an officer that subsequently transitions to another weapon system will be considered a member of the second tribe. Eleven generals have spent most of their early career (multiple assignments) in trainer and helicopter units. These generals are listed as "Other."

[66] Tribal assignment is based upon an obvious preponderance of service in any one tribe early in a general's career. If a general has tours in multiple tribes, and it is impossible to assign any particular tribal membership, then the general is listed as a "Generalist."

determining tribal membership. An officer's earliest years in a career (as a lieutenant or a captain) are considered the "formative" years when they create their closest network of friends, and form their paradigms for viewing employment of aerospace power. This study therefore concentrates on the first 10-15 year period of an officer's career to determine tribal membership (up until first attending an intermediate service school).

There is a difficulty, however, in continuing to classify different USAF tribes by mission or function. Recent changes in how the Air Force applies different weapon systems to different missions make it increasingly difficult to categorize officers by their weapon system. Is an F-117 pilot more associated with the air-to-air fighter tribe as a single-seat pilot, or to the bomber tribe with its emphasis on strategic attack? Is a missileer associated with the space community, or with the strategic bomber community? During the Gulf War, bomber pilots conducted CAS missions, and fighter pilots carried out strategic attack on command and control installations in downtown Baghdad. This blurring of lines between missions may have a future impact on tribal cultures. It is evident in some communities that cultural traits normally thought to be tribally distinctive are now being shared between units across tribal divides.[67] This similarity of thought, especially among younger officers, may be carried over into beliefs of mission and airpower paradigms. There is perhaps another way to categorize officers along generational characteristics.

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[67] Much of this occurred with the combining of SAC and TAC into Air Combat Command. Anecdotal evidence for this blurring of cultures includes everything from the ever-increasing number of USAF Weapons School graduates from non-fighter communities, to such traditionally Fighter tribe traits as callsigns and crud games in ISR and airlift squadrons.

Generations

"Among democratic nations, each generation is a new people."

—Alexis de Tocqueville

"Many of my generation, the career captains, majors, and lieutenant colonels seasoned in that war, vowed that when our turn came to call the shots, we would not quietly acquiesce in halfhearted warfare for half-baked reasons that the American people could not understand or support."

—General Colin L. Powell

Worden's Generations

For young officers, there is a generational quality to one's experiences, especially one's earliest exposure to combat.[68] Worden proposes that "the emotional intensity of combat, especially during these formative years, amplifies the imprint on the memory and behavior of the future military leader."[69] Any number of historical works reflects the importance of this initial impression of combat on a military officer.[70] Worden supposes that airmen involved in the massive strategic bombing of World War II would have a very different outlook on combat than an airman conducting interdiction missions over Vietnam in a politically constrained environment. He defines three generations: the Senior WWII Generation, the Junior WWII Generation, and the Korean War Generation.

Senior WWII Generation. Members of the Senior WWII Generation were long-time members of an Army Air Corps fighting for separation from the Army. They were

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[68] "Epochal historical events establish boundaries between generations. Common experience precipitates common perceptions and outlooks." Arthur M. Schlesinger, Jr., *The Cycles of American History*, (Boston: Houghton Mifflin Company, 1986), 29-30.

[69] Worden, 1.

[70] For examples, see: James Kitfield, *Prodigal Soldiers*, (Washington, D.C.: Brassey's, 1997); Clancy, *Every Man a Tiger,* 95-9, 101-4; Powell, 132-3, 144-9; Roger Cohen and Claudio Gatti, *In the Eye of the Storm: The Life of General H. Norman Schwarzkopf* (New York: Berkley Books, 1992), 101-2, 121-33, 156-60, 227-31, 263; Donald J. Mrozek, *The US Air Force After Vietnam: Postwar Challenges and Potential for Response* (Maxwell AFB, Ala.: Air University Press, 1988).

wedded closely to the theory of strategic bombing which, to them, offered the only means to achieve independence. Commissioned from 1914 to 1931, they were well-educated professional officers, with 94% having college degrees (89% being graduates of the United States Military Academy (at West Point) and 59% attending advanced air studies at the Air Corps Tactical School prior to World War II.[71] These men, such as Generals Spaatz, Vandenberg, and LeMay, would command the USAAF through the war and well into the formative years of independence. The last of this generation, General LeMay, would reign supreme until 1965.

Junior WWII Generation. The Junior WWII Generation was somewhat different. Commissioned from 1932 to 1944, they saw combat in WWII not as commanders but as front-line aircrews. Thus they were involved with the fighting end of airpower, and were not heavily involved in the struggle for independence. Brought in during the rapid mobilization, many of them were not well educated. Only 41% attended West Point and more than a third were aviation cadets (entering service with no college degree). Even after the war, only 29% attended advanced air studies at the Air Command and Staff College (or ACSC, which replaced ACTS in 1946).[72] These men were doers, not thinkers.[73] They held senior leadership in the Air Force from 1965 to 1978.

Korean Generation. The Korean Generation entered the service from 1945 through 1952, too late to participate in WWII, but fought as aircrews in the Korean War. Therefore, their formative combat experience occurred in the complexities of a limited

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[71] These numbers are from Worden's data, Worden, 1-3. To allow for easier assignment of an officer to a specific generation, we have altered Worden's range for generation commissioning dates to eliminate overlap. For example, rather than allow a commissioning date in 1932 to be included in both senior and junior WWII generations, we have separated the years (thus 1932 now falls solely within the junior WWII generation). We continue to allow overlap in the years for which each generation may control senior leadership positions, as the transition of Chiefs of Staff and other leaders often occurs mid-year. This new definition of generations may slightly alter the exact percentages listed by Worden, but the effect should be negligible.

[72] Worden, 3, and Janowitz, 134-45.

[73] "The deficiency in academic education resulted from the relaxed procurement standards necessary to meet the enormous manpower needs of World War II and the attraction of the Air Force to action oriented rather than academically oriented young men." Vance Mitchell, 1996), 197.

war, although this Korean conflict was considered at the time to be an aberration, never to occur again. This experience would be reinforced several years later as this generation rose to command units during the Vietnam War. Senior leaders from this generation were better educated than their predecessors, with more service schooling; 59% graduated from ACSC (as opposed to 38% for WWII generations) and 89% from one of the War Colleges (as opposed to 59% for WWII generations). They also followed broader career paths to dominate top leadership roles.

Unlike her sister services, the USAF had no significant dependence on military academies to provide her officers. Only 50% of the officers during this time period were commissioned from a military academy.[74] Therefore, there was a lack of formalized military "indoctrination." The most formative experiences of most young officers occurred during flight school. "Pilot training ... was the primary military institution for the majority of Air Force officers."[75] Accompanying this change, the demographic of this generation was also different from those in the past. Sixty percent of these senior leaders were fighter pilots; the more limited role of strategic attacks (bombers) in that type of conflict minimized the importance of bombers in the Korean War. Concern over Soviet intentions in Europe also limited the numbers of bombers (and bomber pilots) sent to Korea. In an institution devoted to warfare, those officers with "combat experience" were given disproportionate "importance." Also, combat experience usually places a greater demand on the personnel system to assign new soldiers to these career fields. Thus fighter pilots came to dominate this generation. This generation would hold the key leadership of the USAF from 1978 to 1986.

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[74] Worden, 3.

[75] Sherwood, 37. During the Korean War, more than half of the members of the Air Force Officer Corps were pilots; 200 of 207 Air Force general officers were pilots. Yet two-thirds of USAF officers received their commission through the Aviation Cadet program, not ROTC or a military academy.

Additional Generations

Although Worden did not continue to develop this concept of generations, it is conceivable to do so. The development of the Air Force organization is marked by military confrontations which often affect the worldviews of our political leaders, our perceived threats, and hence our budget and doctrine priorities. These, in turn, impact the
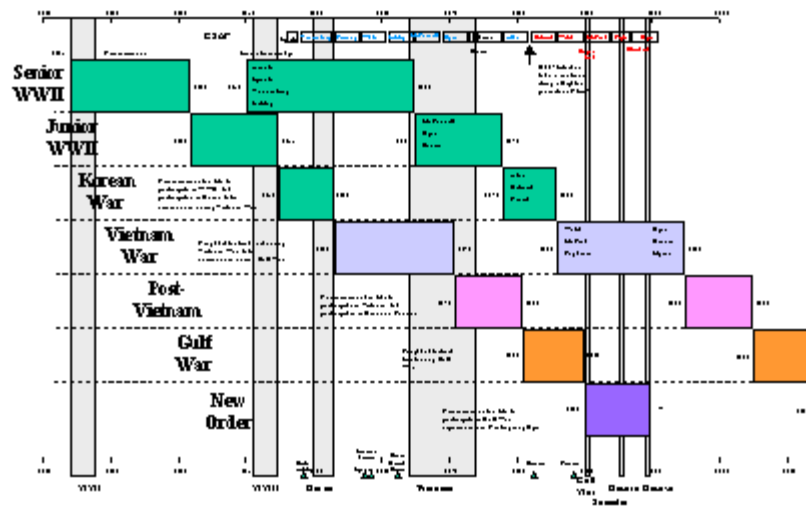
Figure 2. USAF Senior Leadership; The Generations

worldviews of military officers. The environment that young officers encounter when the first enter into the service will affect their outlook as they progress through their careers. Major combat experiences, then, are considered to be the "defining event" that establishes the paradigm of a new generation, distinguishing it from a past one. We can therefore identify four additional generations of military officers (see Figure 2).

There are several assumptions inherent in this generational categorization. First, major wars are the defining event for each generation. Second, when determining the beginning of a generational period, we assume approximately one year of training

between commissioning and when an officer is ready for combat.[76] We can then say, for example, that since combat in the Gulf War occurred in 1991, those officers commissioned in 1990 probably would not have been sufficiently trained to send to combat. Those commissioned earlier may well have participated in this war in some manner, or at least felt the experience of the service during this time. This marks the beginning of a generation. A third assumption is that the most senior officers will have a career that lasts for 35 years, followed by mandatory retirement.[77] This marks the end of a generation as, for example, the last of the generals to participate directly in Vietnam will retire in 2005. The "span" of a generation is dependent on the window between commissioning and retirement, as it relates to military conflicts having a significant impact on the culture of the Air Force. Lastly, those officers within a generation that has been defined by a major conflict can be assumed to all share similar paradigms based on their shared combat experience.[78]

These generational boundaries do *not* represent clear and definitive changes of any individual's behavior. It is unlikely any model may account for every variable affecting an individual's paradigm of combat and military leadership. And surely wars can affect an officer's outlook even if he does not directly participate in it (for example, young officers entering a unit soon after the Gulf War were surely inundated with their

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[76] This delay includes time spent for initial training at schools for pilot, navigator, intelligence, or similar specialty training. This also includes time spent waiting for a school slot, or for security clearances.

[77] Historically, *United States Code Title 10-Armed Forces* has set mandatory retirement for senior general officers at 35 years of service. An extension of the mandatory retirement date was approved by the 1998 Department of Defense Authorization Bill in November of 1997. The current *Title 10* allows lieutenant generals to serve 38 years, and four-star generals to serve 40 years of total active federal commissioned service. *United States Code, Title 10, Section 636*, n.p., on-line, Internet, 30 April 2001, available from http://www4.law.cornell.edu/uscode/10/636.html. See also Lt Col Carl D. Evans, "Growing Tomorrow's Leaders in Today's Environment," Research Report no. 98-094 (Maxwell AFB, Ala.: Air War College, 1998), 60. However, it is still unclear if many USAF generals are using this extension. Also, this additional five years may be offset by younger general officers being promoted early to senior ranks. This research will continue to assume the 35 year career, understanding that if retirement is postponed, the timeline for generations would shift accordingly.

[78] Based as it is on a "normal" career, this method does not necessarily account for below-the-zone promotions which may push such officers forward into the preceding generation.

comrades' war stories). But these generational categories give a useful overall character assessment of each generation. Let us turn, then, to the new generations.

Vietnam Generation. These officers were commissioned from 1952 to 1970. Too young to fight in Korea, this generation's defining moment occurred when they faced combat during the Vietnam War.[79] These officers dealt with the chaos of a limited, unconventional war and the realization that strategic bombing had little impact against an agrarian, non-industrial adversary. They learned that Korea had not been an aberration after all. Airmen saw the futility of massive bomber attacks through a strong IADS against non-strategic targets, and felt the frustration of not being able to gain lasting air superiority over the battlefield.[80] These warfighting lessons can be seen in the development of doctrine more focused on counterforce targets, and also in the AirLand Battle concept. On the political front, this generation struggled with political restraints, a perceived lack of clear political objectives, and declining popular support. These political lessons can be seen in Gen. Colin Powell's influence on the Weinberger Doctrine, which set forth-restrictive criterion for future employment of military forces.

This generation provided us the military leaders of the Gulf War, the conduct of which in many respects was a reaction to the lessons these officers learned during their youth in Vietnam. This generation also saw new technological innovations, such as the employment of precision guided weapons and stealth technology. They readily embraced the employment of such weapons when they took over senior leadership during the Gulf War. Officers such as Generals Merrill McPeak, Ronald Fogleman, and Michael Ryan held the senior leadership positions. This is the current generation at the top of USAF

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[79] For examples of the impact of the Vietnam War on these officers, see: Kitfield; Clancy, *Every Man a Tiger,* 95-9, 101-4; Powell, 132-3, 144-9; Cohen and Gatti, 101-2, 121-3, 156-60, 227-31, 263; and Mrozek.

[80] Barry Watts, Northrop Grumman Corp., personal correspondence with author, 3 October 2000. See also Wayne Thompson, *To Hanoi and Back,* (Washington, D.C.: Smithsonian Institution Press, 2000).

hierarchy, and will last from 1986 until 2005, when the last generals with Vietnam experience retire.

Post-Vietnam Generation. Commissioned from roughly 1971 until 1980, this generation was not involved in either the Vietnam War or fighting at the personal combat level in the Gulf War. Largely associated with the "Baby Boomers," their formative experiences were shaped by the post-Vietnam self-assessment of the military following the war, not by any significant combat. The drawdown following the Vietnam War reduced the number of officers required.[81] Thus standards (such as education) could be raised as the military moved to the all-volunteer force. The greater role of women and minorities in the military preceded the expanding role of women and minorities in society at large. This generation also experienced a steady decline both in USAF personnel and in Department of Defense spending as a percentage of Gross National Product following the Vietnam War (see Figures 3 and 4).[82]

Operations were limited to Operation Desert One (during the Iranian hostage crisis) and Grenada; although not exactly nation-threatening events, these operations did highlight the need for rapid deployment of forces to intervene in crisis situations. As they progressed in their careers, they enjoyed the buildup of the Reagan administration, and its renewed emphasis on strategic forces. The USAF at this time still saw the Soviet Union as the primary adversary and military strategy was focused on a major conventional confrontation in Europe. But the 1973 Arab-Israeli war and the energy crisis of 1974 highlighted the Middle East as a region "vital" to our national interests. These officers had very little experience in joint operations, as shown by Operation Desert One during

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[81] Vance Mitchell, 1996), 251-3.
[82] For USAF spending during this period, see Figure 7, page 61.

the Iranian hostage crisis.   This is the generation that supplied squadron-level commanders during the Gulf War, and who now make up our wing commanders. A few of them will attain control of the Air Force in approximately 2005, and will likely hold it until 2015.
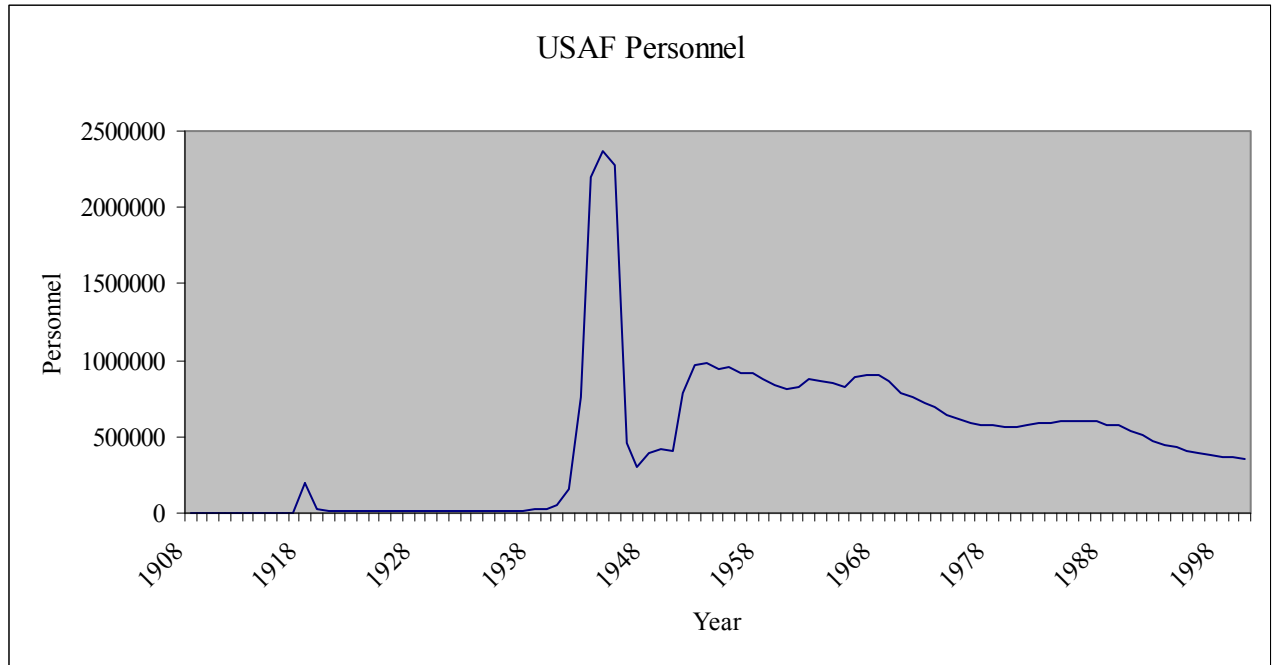
Source: Air Force Magazine 2000 Almanac.

Figure 3. USAF Personnel
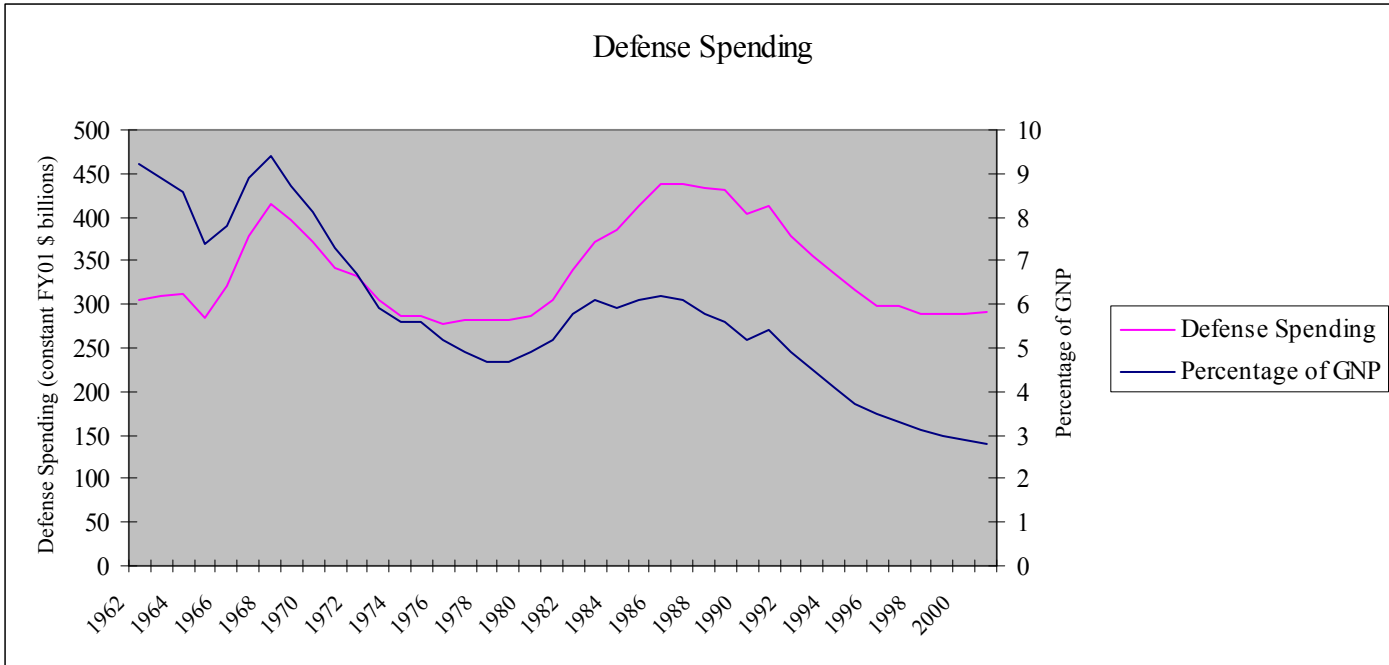
Source: Air Force Magazine 2000 Almanac.

Figure 4. Defense Spending, and Spending as a Percentage of GNP

Gulf War Generation. This generation entered the Air Force from 1980 until 1989 and represent what many have called the leading edge of the "Generation X" or "Thirteenth Generation."[83] These young officers were brought in during the Reagan administration at a time of increased spending on defense, and were assigned to the new weapon systems purchased during Reagan build-up. They saw the first sustained increase in personnel since Korea, as well as an increase in Defense spending as a percentage of GNP.[84] Their defining event was fighting at the combat level during the Gulf War, in which they enjoyed strong "homefront" support, and returned from combat as heroes. For the first time in many years, concern over Soviet involvement did not "limit" our political or military options in a war. Other concerns, such as the preferences of our coalition allies, or religious and cultural circumstances, defined our limits.

This group has never known military defeat, and has enjoyed a qualitative superiority over potential adversaries. Thus this generation is likely not to be as adverse to using the military for "proactive" national strategy as their predecessors might have been. Grenada, Libya, Panama, and the Gulf War were all examples of the Reagan/Bush administrations using this generation to achieve limited political objectives. The distinction between fighter and bomber aircraft do not carry the same weight with these officers, as they note B-52 "bombers" conducted close air support missions and F-117 "fighters" were doing precision strategic attack in Iraq. Differences may have been further broken down when Bomber, Delphic and Mobility warfighters joined Fighter tribe members at the Nellis Flag exercises and USAF Weapons School following the Gulf War. These officers believe in technology, especially with respect to interconnectivity and an increased dependence on other systems, such as space and ISR, command and

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[83] William Strauss and Neal Howe, *Generations: The History of America's Future, 1584 to 2069* (New York: William Morrow and Company, Inc., 1991).
[84] Personnel strength during the Vietnam War showed increases only from 1961-62 and 1966-68.

control, and data links. Most military endeavors involving these officers included joint and coalition cooperation. This generation will control the service from 2015 to 2025.

New Order Generation.[85]   First commissioned in 1990, the New Order generation of military officers has yet to reach a culminating "defining moment" that might lead to a succeeding generation.[86] Too young to participate in the Gulf War, or the Cold War, this generation has monitored no-fly zones and conducted humanitarian "peace-keeping" missions. *Global Reach, Global Power* and the role of a sole superpower "supercop" is an accepted reality. Nation building is often considered more important than "unconditional surrender." Combat is not emphasized; destruction is not always the answer. They have encountered extremely politicized operations, in which maintaining the coalition is almost as important as defeating the adversary, and where losing a life is worse than losing. This is the generation that "benefits" from an expectation of "zero casualties," and has felt the impact of this on employment tactics.

This generation has grown up with the interconnectivity of the Internet and the idea of nodeless networks. This translates into a familiarity with increased connectivity between weapon systems, and an accepted reliance on the inputs of others to enable their warfighting capability. Substantial integration of space systems into terrestrial operations is expected as standard. The idea of "effects-based targeting" is taking hold, and the realization that it is not the weapon system, which determines the level at which the mission is conducted. This shift in mentality threatens to broaden the definition of the "warfighter" beyond the traditional "bomber pilots" and "fighter pilots." This generation has never known a SAC or TAC, and allegiance to such communities is considered a humorous throwback to days long gone. This generation would have just as much

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[85] This generation, born from approximately the late 1960s through the 1980s is also referenced in popular culture as including both "Generation X" and "Generation Y."

[86] I am very wary that it may be difficult to maintain an objective perspective standing in the middle of this generation.

difficulty identifying with Boots Blesse's air-to-air fighting as LeMay's bombing ideas; both concepts are now considered almost archaic.

Increased connectivity is not always seen as a good thing. This generation has experienced first-hand the ability of their senior commanders to directly intervene in tactical level operations, which may produce a backlash of junior officers once they have attained combat command positions. And yet they also see the political repercussions of "mistakes" reaching lower and lower into the ranks, and thus the pressure to micro-manage is great, if only out of self-defense. These officers have also dealt with the troubles of computer viruses, and understand the possibility of information attack. This may lead them in their development of future warfighting tactics. This generation will achieve dominance of the Air Force in 2025.

Summary. William Strauss and Neil Howe present a similar theory of generations in American society.[87] They have defined several generational "cohorts" which compare closely to our own categories of generations (see Figure 5). Strauss and Howe go on to say that generations occur in cycles, often mirroring (not repeating) previous generations. If so, then their "Thirteener Generation" (which encompasses our Gulf War and New Order generations) will reflect the attitudes, styles, and opinions of their "Lost Generation" (Worden's senior WWII generation). Our generations were derived independently of the theories by Strauss and Howe, yet they match up fairly closely. Both assume warfare is the independent variable that drives generational change, thus accounting for the similarity.[88] If one assumes the average officer entering the Air Force is 23 years of age, this will align the generational "commissioning" years of our model with the generational "birth" years of the Strauss and Howe theory. Figure 6 demonstrates the replacement in senior leadership of the current Vietnam Generation

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[87] Strauss and Howe, *Generations*; and *The Fourth Turning; What the Cycles of History Tell Us About America's Next Rendezvous with Destiny (*New York: Broadway Books, 1998).

[88] It must be noted that Strauss and Howe build their construct on a circular concept of time, whereas our model can adapt to either a circular or linear temporal paradigm.

with the ascendant Post-Vietnam Generation.[89]   Using a standard of 23 years for an officer to attain the rank of brigadier general, we may predict the Gulf War Generation will produce its first generals by 2004, and the New Order Generation will see their first generals in 2013.[90]

Comparison of Generations

Strauss and Howe Generations   USAF Generations

	Birth	Calculated Commissioning*	Commissioning	
Lost	1883-1900	1906-1923	1914-1931	Senior WWII
GI	1901-1924	1924-1947	1932-1944	Junior WWII
			1945-1952	Korean War
Silent	1925-1942	1948-1965	1953-1970	Vietnam War
Boom	1943-1960	1966-1983	1971-1980	Post-Vietnam War
			1981-1989	Gulf War
13	1961-1981	1984-2004	1990-	New Order
Millennial	1982-	2005-		

1910 1920 1930 1940 1950 1960 1970 1980 1990 2000

* assuming average age at commissioning is 23.

Source: Strauss & Howe, *Generations* and Col Mike Worden, *Rise of the Fighter Generals*.

Figure 5. Comparison of Generations; Strauss and Howe Versus Current Model

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[89] Based upon career information obtained from the USAF Biographies website, http://www.af.mil/lib/bio/.

[90] Observing current four-star generals, most achieved general officer rank at the 23 year point in their careers.

Progression of Generations through Senior Ranks
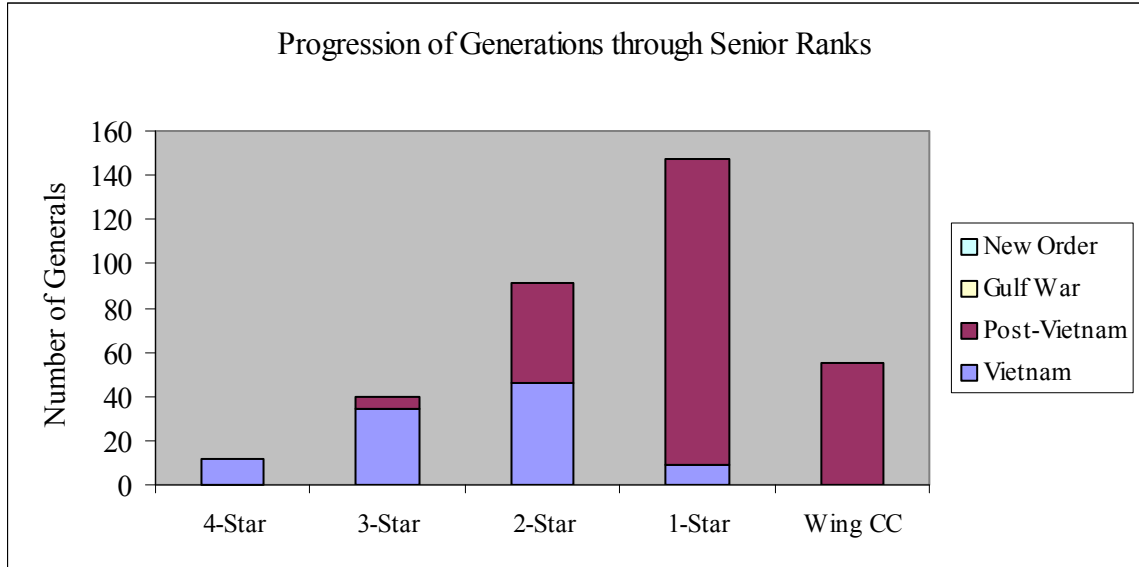
Source: USAF Biographies website.

Figure 6. Progression of Generations through Senior Ranks

Strauss and Howe also discuss a cyclical occurrence of Anglo-American crises. They refine cyclical war theories of earlier historians (such as Auguste Comte, John Stuart Mills, Quincy Wright, Arnold Toynbee, and Arthur Schlesinger, Jr.) to develop a theory of periodic social upheavals.[91] Their conclusion is that an Anglo-American crisis, or "Fourth Turning," occurs approximately every 85 years.[92] They claim the environment is such that major confrontations, with the possibility of altering entire social structures and existing power distributions, will occur on a regular basis. They further warn us that "every Fourth Turning since the fifteenth century has culminated in a total war."[93] This prediction implies that the senior military leaders of the Thirteener/Gulf War Generation will face a major power-shifting crisis some time between 2005 and 2025, much like their predecessors Eisenhower and Patton did before them in WWII.[94] Obviously, we cannot know for sure if this will occur. But it does provide impetus for asking interesting questions when comparing generations. Captain John Bodnar used this generational construct to measure cultural change, by tracking racial integration in the US Naval Academy and predicting when the Navy will have its first African-American Chief of Naval Operations and Naval Academy superintendent.[95]

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[91] See Strauss and Howe, *Fourth Turning*, 36-7 and 63-6; Auguste Comte, *Cours de philosophie positive*, (Paris: Borrani et Droz, 1835); John Stuart Mill, *A System of Logic, Ratiocinative and Inductive; Being a Connected View of the Principles of Evidence, and the Methods of Scientific Investigation*, 8th ed. (New York: Harper & Brothers, 1900); Quincy Wright, *A Study of War*, 2nd ed. (Chicago: University of Chicago Press, 1965), 223-32, 380-7; Arnold J. Toynbee, *A Study of History*, vol. 9, (New York: Oxford University Press, 1954), 220-347; Arthur M. Schlesinger, Jr., *The Cycles of American History*, (Boston: Houghton Mifflin Company, 1986), 23-48.

[92] Strauss and Howe list the past nine: the Wars of the Roses (1459-1487), the Armada Crisis (1569-1594), the Glorious Revolution (1675-1704), the American Revolution (1773-1794), the American Civil War (1860-1865), and the Great Depression/World War II (1929-1946). Strauss and Howe, *Fourth Turning*, 43-6, 254-71.

[93] Ibid., 119.

[94] Ibid., 51.

[95] "Most people's values and political beliefs are formed during their youth, and whatever outlook they have when they become politically aware usually stays with them for the remainder of their lives. Thus movement right or left in American history are not due to individual people changing their political beliefs, but rather to younger generations supplanting older ones with differing viewpoints." CAPT John W. Bodnar, "How Long Does it Take to Change a Culture? Integration at the U.S. Naval Academy," *Armed Forces & Society* 25, no. 2 (Winter 1999): 289-306.

Stephen Rosen notes a similar generational construct to explain military innovation in the Navy and Marine Corps.[96] We may also use this concept for our own questions. Does the Strauss and Howe model imply that each type of generation will produce a distinctive type of military leader? Will the officer of the Gulf War Generation have the same impact as their earlier soulmates, the Senior WWII Generation of Spaatz and LeMay? This earlier generation developed a clear military strategy for airpower and fought for an independent Air Force; what might their descendants accomplish?

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[96] When looking at Admiral William Moffett's efforts to highlight the role of carrier aviation, Rosen states "the entire process thus took about twenty five years, or roughly the amount of time it took for a navy lieutenant to rise to the rank of captain or rear admiral. It was a strategy based on shaping the process of generational change in the officer corps…" Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military* (Ithaca, N.Y.: Cornell University Press, 1991), 80. Rosen notes a similar generational lag when the Marine Corps moved from a doctrine based on small wars to one of amphibious warfare, 81.

Chapter 4

Tribal Conflict on the Doctrine/Budget Battlefield

Tribal conflict often takes place on the doctrine and budget battlefield. Preeminence in doctrine or in budget priorities often indicates who holds the leading role within a military service. Joint Publication 1-02 defines doctrine as the "fundamental principles by which the military forces ... guide their actions."[97] For the Air Force, doctrine indicates the way it expects to employ airpower to meet national objectives. Unfortunately, USAF doctrine has often strayed from the pure analysis of past military history, and has instead reflected the external budgetary and political environment. Doctrine rarely evaluates air power history critically to determine how best to fight; it usually reflects the current national security policy which defines how the military is allowed to fight. Thus the USAF, like the other services often uses its doctrine to justify budget battles with its sister services.

Changes in doctrine are usually reflected in changes to military budget priorities, as well as weapon system procurement and military organization. As new doctrine emphasizes new weapon systems to meet new threats, acquisition programs mirror these changes. New USAF wings are added to accommodate the increased weapon systems. While Worden leaves unanswered the question whether changes in doctrine and budget priorities are a cause of, or a result of, changing senior leadership, it is an interesting parallel nonetheless. Doctrine and budget priorities are the result of many factors, including external threat, national policy, economic conditions, congressional interest, technology developments, interservice and intraservice rivalries. Causal relationships are difficult to determine. But trends are identifiable.

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[97] Joint Pub 1-02, 142.

In this and the next section, we will examine the evolving world environment, and its impact on tribal preeminence within the Air Force. A changing world environment coupled with new national strategies proposed by various administrations led to changes in USAF doctrine, budget priorities, and acquisition programs. Increasing weapon system procurement led to fluctuations in aircraft inventory and the associated military structure to employ these weapon systems (namely, the number of USAF wings). These trends will suggest changes in status among the USAF tribes.

Historical Review of USAF Doctrine

Early Doctrine. Changing priorities can also be traced through the evolution of Air Force doctrine. Although early uses of aircraft were directed toward reconnaissance, the experiences of World War I demonstrated to many aviation enthusiasts the future application of airpower. Early theorists such as Giulio Douhet and Sir Hugh Trenchard praised the ability of airpower to affect war at the strategic level. In America, General William Mitchell actively publicized the strategic aspect of airpower. The idea of bombers, striking deep into enemy territory to destroy vital centers of the adversary's industrial ability to wage war, was a theme quickly adopted by the instructors at the Air Corps Tactical School, and aviation leaders such as Generals Henry Arnold and Carl Spaatz.

After achieving independence in 1947, the Air Force wrote its early doctrine to reflect those fundamental principles which enabled it to achieve independence from the Army. Airmen sought an "air-centered" approach to war-winning, in their attempt to justify their separate service. They found this concept in strategic bombing, which bypassed an adversary's fielded forces to strike directly at his "centers of gravity" (usually with bombers, but later with missiles and fighter aircraft). Those vital centers were what sustained the adversary's ability and will to wage war; to attack (or threaten) them could achieve our political objective.

The earliest US Army Air Corps doctrine was published in 1926, as War Department Training Regulation (WDTR) 440-15, *Fundamental Principles for the Employment of the Air Service*. At this time, airpower was still a new concept, to be controlled by the Army ground commander. A new version of WDTR 440-15 in 1935, *Employment of the Air Force of the Army*, admitted the possibility that airpower might have some utility beyond the immediate land battle. This was a rather radical idea; this independent use of airpower was simultaneously being cultivated in the Air Corps Tactics School at Maxwell Air Force Base, AL. By 1940, with War Department (WD) Field Manual (FM) 1-5, *Employment of the Aviation of the Army*, the idea of strategic bombing was first incorporated into US military doctrine "to nullify the enemy's war effort or to defeat important elements of the hostile military forces." But air forces were still employed at the discretion of ground commanders, appearing in doctrine as late as Army FM 310-35, Aviation in Support of Ground Forces (1942). In 1943, the Army published FM 100-20, *Command and Employment of Air Power*, which served as an Air Corps "declaration of independence" from the land forces. Following the difficulties of decentralized employment of U.S. air forces in North Africa, this document clearly indicated that obtaining air superiority was the priority of air forces, and that this was best served by centralized command and control of airpower under an airman.

Eisenhower (1953-61). When he took office in 1953, Eisenhower's administration called for a thorough review of national strategy. Soviet Communism, especially following the Soviet Union's detonation of a hydrogen bomb in 1953, and the launch of Sputnik in 1957, was considered the primary threat. Therefore the idea of "containment," and the strategy for nuclear deterrence with airpower dominated the concerns of the administration. Post-Korea, President Eisenhower desired a limited defense budget, and therefore determined that strategic nuclear deterrence, through the concept of massive retaliation, was the most economical solution. Eisenhower's "New

Look" national strategy favored the Air Force and the development of Strategic Air Command (SAC).[98]

The resulting USAF doctrine was Air Force Manual (AFM) 1-2, *United States Air Force Basic Doctrine*, 1 April 1953. Published revisions of this doctrine were later released on 1 April 1955, and 1 December 1959. These doctrine publications reflected early airpower enthusiasts in their belief in the efficacy of strategic bombing, especially weapons of mass destruction (nuclear weapons). Air Force experiences in the Korea War were noticeably absent in these publications; Korea was considered an aberration and had no significant impact on USAF doctrine.[99] The 1953 version continued to emphasize strategic bombing as the war-winning capability provided by the Air Force, but began to equate nuclear weapons as another means of conducting air warfare. The 1955 revision continued this transition toward considering strategic nuclear attacks on military installations and cities as the best means to destroy the adversary's will and capability to wage war.[100] The 1959 revision provided little significant change to USAF doctrine, despite the recent impact of Sputnik (1957) and the development of satellite and missile technology. Although doctrine writers substituted the term "aerospace" for "air forces," there was little change to the doctrine itself to reflect any unique qualities of missile and space technologies.[101] It was believed, however, that there was no need to stray from the central theory of strategic bombing, and its deterrent effect.[102]

Within the Air Force, this meant a continuation of the dominance of strategic forces. SAC received both budget and program priority during this period. Tactical air

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[98] Jones, 5.

[99] "Both the 1953 version and its 1954 successor focused almost completely on the World War II experience, leaving out experiences learned in the Korean War." This was a critique the Air Force leveled upon itself in AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force,* 14 August 1984, A-3.

[100] Jones, 6-7.

[101] It must be remembered that such technology was still under development, and the implications of such weapon and sensor systems were still unclear.

[102] Futrell, vol. 1, 9.

forces were marginalized. Technological improvements also favored a new tribe, the missileers. The development of a hydrogen fusion device overcame many technological problems associated with the young ICBM program. Its plausible threat to the Soviets, and its relatively inexpensive cost, made missiles attractive to the politicians despite the reluctance of the Air Force leaders to pursue an intercontinental ballistic missile (ICBM) program.[103]

Kennedy/Johnson (1961-69). A national strategy based on massive retaliation would continue through the Kennedy Administration. When he took office in 1961, President Kennedy began to pursue a policy of "flexible response." Increasingly, the United States was being confronted with conflict falling well short of the threshold demanding nuclear response, especially following Khrushchev's announcement in 1961 to pursue a new Soviet strategy of limited wars and popular uprisings. Not wanting to risk escalation to an all-out nuclear exchange, strategic bombing was seldom seen as a viable option. Wishing to avoid confronting crises such as he faced in Cuba, Berlin, and Laos with only a nuclear option, Kennedy and his Defense Secretary, Robert S. McNamara, pushed for an entire spectrum of military responses, including

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[103] Jacob Neufeld, *Ballistic Missiles in the United States Air Force 1945-1960* (Washington, D.C.: Office of Air Force History, 1990); see 121, 142 for specific discussion of SAC CINC General Curtis LeMay's skepticism of the ICBM program for anything other than "political and psychological value." See also David N. Spires, *Beyond Horizons: A Half-Century of Air Force Space Leadership* (Maxwell AFB, Ala.: Air University Press, 1998), 16-21. "During the period of 1945 to 1954, an Air Force attitude of 'neglect and indifference' toward the development of the ICBMs permitted the Soviet Union to gain an early lead in long-range ballistic missile technologies. Until the Office of the Secretary of Defense and other civilian authorities, including President Eisenhower, intervened to impose an accelerated schedule and new management organizations and procedures that in effect removed the ICBM's development from normal USAF channels, 'cultural resistance' within the Air Force to a new weapon that promised to displace the manned bomber restricted USAF interest in the ICBM largely to situations in which it 'perceived a threat from... a sister service' to acquire them." Quoted in Builder, *The Icarus Syndrome*, 171, Jeffrey Record, "The Future of the Air Force" (The Hudson Institute, unpublished draft, April 1990), 122. Even later, "throughout the period from 1955 to 1959, Air Force leadership, although endorsing a struggling missile program, was not committed to supplementing or augmenting the bomber force with ballistic missiles if it means de-emphasizing the status of an aerial bombardment strategy, if it undermined the superior position of the manned bomber, or if it denigrated the priority in development of any 'follow-on' manned bomber." Quoted in Builder, *The Icarus Syndrome,* 175, Major Michael R. Terry, "Formulation of Aerospace Doctrine, 1955-59," *Air Power History* 38, no. 1, (Spring 1991): 52.

counterinsurgency and conventional warfare. The Johnson administration continued much of the Kennedy/McNamara national strategy.

All through the 1960s, there was an increasing emphasis on conventional warfare, mostly driven by external factors such as changes to presidential national strategies and the Vietnam War. President Kennedy's "flexible response" national strategy was reflected in AFM 1-1, *Aerospace Doctrine, United States Air Force Basic Doctrine*, published in 14 August 1964. This document was the first USAF doctrine to significantly discuss the full spectrum of conflict. Aerospace forces would be employed at all levels of war, to include general war, tactical nuclear operations, conventional and counterinsurgency operations.[104] Still, this doctrine continued to focus on a major confrontation with the Soviet Union. The Korean experience, a limited war against a non-industrial opponent, is not reflected in the document. This version of USAF doctrine would last throughout the Kennedy/Johnson administrations.

This change in national policy altered program priorities, affecting the types and numbers of aircraft purchased. This, in turn, led to a force restructuring to address the new emphasis on tactical air forces. The shift in national strategy toward flexible response significantly increased the role and size of general-purpose forces.[105] More fighter aircraft meant more fighter pilots to man them, and more fighter wings to house them. This also provided additional opportunities for leadership and command for the Fighter tribe, providing an increased opportunity for combat and command experience. McNamara also stressed strategic airlift.[106] The C-141 transport was first produced in 1963, and the C-5A program was initiated in 1965.[107] While manned bombers reached

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[104] AFM 1-1. *United States Air Force Basic Doctrine*. 14 August 1964, was the first USAF doctrine to mention "guerrilla" and "counter-guerrilla" activities.

[105] Futrell, vol. 2, 717. Technological developments also favored tactical aircraft; the ability of the USAF to miniaturize nuclear weapons to fit onto fighter aircraft made the employment of tactical nuclear weapons feasible.

[106] Ibid., 623-9.

[107] Ibid., 122-3.

their post-war peak of 1800 aircraft in 1957-1959, they declined to 1500 by mid-1961, and continued to decline throughout the Kennedy and Johnson terms.[108] When Kennedy took office, McNamara did not push for more strategic bombers in FY62, but instead put more bombers on alert. He stressed survivability through an intensive alert posture, rather than through greater numbers.[109] The increasing inventory of ICBMs offered an additional means of relying less on manned bombers for deterrence.[110] The number of USAF strategic bomber wings thus declined from 43 in mid-1959, to only 37 by mid-1961.[111]

Nixon (1969-74). The credibility of our nuclear deterrence was a concern for the Nixon administration. At the close of the Vietnam War, the United States was again returning its focus to its primary threat, a confrontation with the Soviet Union in Europe. By this time, the Soviets had achieved nuclear parity in numbers of missiles and they had demonstrated a substantial increase in both quantity and quality of their conventional forces based in Europe.[112] American political influence in Europe had declined while West Germany was using its resurgent political clout to resist relying solely on the deployment of tactical nuclear weapons to provide security against the Warsaw Pact.[113] Mutual assured destruction was thus seen as only part of a balanced nuclear and conventional approach to deterrence.

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[108] Ibid., 28.

[109] Ibid., 29.

[110] The number of ICBMs increased from 12 in 1960 to a total of 1054 by 1967. Desmond Ball, *Politics and Force Levels: The Strategic Missile Program of the Kennedy Administration* (Berkeley, Calif.: University of California Press, 1980), 50. New missile programs during the Kennedy administration include the Jupiter, Titan I and II, Polaris A-2 and A-3, Pershing 1A, Atlas F, and the Minuteman I and II. It is interesting to note the rather lengthy discussion in the 1964 version of AFM 1-1, *United States Air Force Basic Doctrine,* defending the use of unmanned ballistic missiles as an addition to, not a replacement of, manned bombers. One might assume General LeMay (the USAF Chief of Staff who signed this document) was attempting to justify the continuation of manned bombers in the face of critics and budget-cutters who wished to do away with them.

[111] Futrell, vol. 2, 28.

[112] And also a willingness to use force, as shown by the Soviet invasion of Czechoslovakia in 1968.

[113] David N. Schwartz, *NATO's Nuclear Dilemmas* (Washington, D.C.: The Brookings Institution, 1983), 194-201.

Air Force doctrine followed suit with AFM 1-1, *United States Air Force Basic Doctrine*, published in 28 September 1971. While deterrence was still considered the primary objective of U.S. national security policy, this doctrine proposed the concept of "sufficiency of forces" to maintain "that degree of military power which can be expected to deter a potential enemy from attacking the United States or its allies."[114] Although it still focused on strategic forces, it suggested conventional forces also played a role in deterrence.[115] It thus provided a range of military options across the spectrum of warfare, reflecting former Defense Secretary McNamara's idea to provide political leadership with a range of options.[116] Other tribes thus received new attention. This version was the first to provide a substantial discussion of special operations.[117] This doctrine also contained the first discussion of the role of the Air Force in space.

Ford (1974-77). The Ford administration pursued a "realistic deterrence" national strategy to deter war, but to be prepared to protect U.S. interests should deterrence fail. Continued Soviet build-up of conventional forces in Europe, and the recent Arab-Israeli War of 1973, influenced strategic thinking toward an increasingly multi-polar world. "The emerging power vacuum in Southwest Asia demonstrated that US defense interests were no longer regional but had become global."[118] Therefore, Nixon's Defense Secretary James R. Schlesinger, and Ford's Defense Secretary Donald

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[114] The 1971 version of AFM 1-1 also recognized that strategic (nuclear) forces may not be sufficient for deterrence. Apparently applying the lessons from the Mid-East War of 1967, the invasion of Czechoslovakia in 1968, and the Vietnam War, this doctrine stated "strategic force sufficiency may not be credible deterrent against hostile acts by small powers alone or while serving as proxies for larger powers."

[115] "Deterrence of these threats comes from the maintenance of sufficient general purpose forces capable of rapid deployment and sustained operations combined with the national resolve to deploy and employ these forces. Thus, strategic and general purpose forces are complementary in providing an overall credible deterrent posture." Despite this discussion of general purpose forces, the 1971 version of AFM 1-1 still devotes a vast amount of its discussion to the use of strategic and tactical nuclear weapons. AFM 1-1, *United States Air Force Basic Doctrine*, 28 September 1971.

[116] Jones, 12.

[117] Futrell, vol. 2, 720.

[118] Ibid., 651.

H. Rumsfeld, were both concerned with the use of airlift and conventional forces for U.S. reinforcement of allies in NATO or the Middle East.[119]

AFM 1-1, *Aerospace Doctrine, United Stated Air Force Basic Doctrine* (published on 15 January 1975) reflected the post-Vietnam national strategy of "realistic deterrence." Taking center stage in this version was the "strategic triad," a mixed offensive force of manned bombers, land-based missiles, and submarine-launched missiles. Reflecting a need to integrate with NATO forces, this was also the first USAF doctrine to discuss the idea of combined operations. There was also a rethinking on the part of the Air Force as to our faith in the strategic bomber. Operations in Vietnam showed that the B-52 bombers could be very vulnerable to a modern air defense system. The experience of the Arab-Israeli War in 1973 also highlighted the lethality of an integrated air defense system along the battlefront. It was now feared the bomber would *not* always get through. These two wars suggested fighters, flying fast and low and penetrating into the enemy's rear echelons, might be more survivable. Yet none of this was reflected in official doctrine. There was a noticeable lag between what the USAF practiced, and what it preached.

A very interesting debate took place within the services during the 1970s, as the senior leadership of the Air Force was passing from the Bomber to the Fighter tribe. On 1 July 1976, the U.S. Army published the concept of AirLand Battle in Field Manual 100-5, *Operations*, AirLand Battle was a concept to confront a Soviet invasion of Europe at the front, using airpower as a means to help counter the vastly more numerous Soviet armor units. The idea was that NATO ground forces would resist the first echelon assault of a Soviet attack, while airpower would attack the reinforcing second echelon Soviet forces that intended to exploit initial breakthroughs in NATO defenses. Although a

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[119] Significant conventional weapon system programs were acquired during the Nixon/Ford administrations, to include the F-15, the E-3 AWACS, the A-10, and the C-5. This period also saw the centralization of all defense airlift under Military Airlift Command in 1974, putting mobility on par with the other "warfighting" commands. Ibid., 645.

memorandum of understanding between Army Chief of Staff General Edward C. Meyer and Air Force Chief of Staff General Charles A. Gabriel was signed in April 1983, AirLand Battle was never officially included in USAF doctrine.[120] The MOU was merely an agreement to conduct joint tactical training and field exercises based upon the AirLand Battle concept with the intention of improving joint operations and addressing doctrinal differences between the Air Force and Army.[121] Yet its concept of using tactical air forces to attack second and third echelon Soviet forces became ingrained in the Air Force community.

Carter (1977-81). President Carter faced a different world environment. The Soviet invasion of Afghanistan (1979), the Iranian Revolution (1979) and the energy crisis of 1974 highlighted the importance of the Middle East to U.S. security. President Carter's Defense Secretary, Dr. Harold Brown, therefore pursued a "countervailing strategy;" the U.S. would respond to a Soviet nuclear strike in a manner, which would guarantee no significant gain to the Soviets.[122] This meant the U.S. would maintain an "essential equivalence" to the Soviets in strategic forces, to prevent Soviet nuclear forces being used to coerce other nations, and to ensure nuclear stability. The importance of power projection, often dependent upon airlift, to regions other than Europe subsequently increased during this period. The Carter administration then created the Rapid Deployment Joint Task Force (RDJTF) in 1980 to quickly respond to crises around the

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[120] "A memorandum of understanding (MOU) on Joint USA/USAF Efforts for Enhancement of Joint Employment of the AirLand Battle doctrine signed on 21 April 1983. On 22 May 1984, the two service chiefs signed a memorandum of agreement (MOA) on US Army--US Air Force development process. The MOA addressed broad war-fighting issues and identified 31 initiatives which have the potential to enhance our war-fighting posture and have an impact on the way future combat operations are conducted." Thomas A. Cardwell, III, *AirLand Combat: An Organization for Joint Warfare* (Maxwell AFB, Ala.: Air University Press, 1992), 71.

[121] Futrell, vol. 2, 546-55.

[122] Ibid., 355.

world. Yet though his focus appeared to be on crises short of nuclear war, President Carter did not significantly develop his general-purpose forces.[123]

AFM 1-1, *Functions and Basic Doctrine of the United States Air Force* (published on 14 February 1979) was not taken very seriously. Often called the "comic book doctrine," it was filled with illustrations and military quotes targeted for the front-line airman. It clearly emphasized deterrence as the means for achieving peace. The discussion of space operations expanded, and for the first time was identified as one of the nine basic operational missions of the USAF. A new "Principle of War" was added, called "timing and tempo," which demonstrated the impact of Colonel John Boyd's Observe-Orient-Decide-Act (OODA) loop concept. This principle proposed that maintaining a quicker tempo of action might disrupt an adversary's strategy enough to defeat him. This doctrine thus placed an increasing importance on command and control, connectivity, and the means for an air commander to employ intelligence to quickly react to adversary actions.

Reagan (1981-89). The Reagan administration took a much more aggressive approach to world affairs, and especially towards the Soviet Union. With his "rollback" strategy, President Reagan followed a proactive policy of not just containing communism, but reversing its influence around the world. Reagan's highest priority was thus to project U.S. military power worldwide, emphasizing the command, control, and communication capabilities of strategic forces. Massive increases in military spending led to the development of many weapon systems.[124] Purchase of additional C-5 and KC-10 mobility aircraft reflected Reagan administration's high priority to rapidly project U.S. military power worldwide. With nuclear parity assured, the confrontation between the U.S. and Soviet Union took place often through proxies at the operational level.

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[123] Only two major programs, the F-16 and the Trident I C-4, were acquired during the Carter administration. Only the F-16 is considered a General Purpose Forces system.

[124] These systems include the B-1B, F-117 and KC-10 aircraft, plus the air/land/submarine launched cruise missiles, MX Peacekeeper and Pershing II ballistic missiles.

AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force* (14 August 1984) was still a reflection of the ACTS theories of strategic bombing. But this doctrine did not reflect the views of the entire Air Force. Intense doctrinal debates were taking place within the service, and several revisions were proposed, but so many organizations disagreed on the structure that no new manual was published until 1992. Early drafts of the rewrite still focused on large-scale theater wars against a modern industrialized nation, but later drafts began to concentrate on the operational level of war.

The 1984 version of AFM 1-1, and the doctrinal debates that followed, marked the beginning of a change in Air Force doctrine (to be fully developed in the next revision).[125] This version of USAF doctrine focused on warfighting rather than functions.[126] The ascendancy of the Fighter tribe called these old paradigms into question. General Charles A. Gabriel became the first in a continuous line of eight fighter pilots to serve as Air Force Chief of Staff since 1982. This newly dominant Fighter tribe brought their own paradigm of warfare to the forefront. Warfighting, rather than deterrence, became the priority. The experiences of Vietnam (and subsequent conventional confrontations) highlighted the role of tactical general-purpose forces. Although not officially Air Force doctrine, much of the Air Force was following the "unofficial" doctrine of AirLand Battle. Led by General Wilbur Creech, Tactical Air Command (TAC) came to an agreement with the Army's Training and Doctrine Center (TRADOC) to train for an AirLand Battle scenario in Europe. General Gabriel signed a memorandum of agreement with the Army in 1984. The tactical air forces would plan to engage the Soviet second and third echelon forces, while the Army would cover the forward edge of the battle area. This method of warfighting was in close support of ground forces, and marked a return to the tactics of Weyland and Patton in WWII.

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[125] Jones, 35. Futrell, vol. 2, 744.

[126] Futrell, vol. 2, 744. "Through the fifties, sixties, and seventies nuclear strategies and deterrence policies had dominated military doctrine almost exclusively... nonnuclear airpower doctrine and the lessons of history had been all but forgotten." Jones, 17.

Other officers were headed in another direction. In 1986, Colonel John Warden published his book *The Air Campaign*, which proposed a return to the use of airpower to strike the adversary's strategic centers of gravity.[127] His orientation was at the operational level of war, concentrating on a theater-wide air-oriented campaign to achieve decisive victory. According to Warden, airpower's influence should be directed at more than just the enemy's ground forces. Airpower should strike deep to attack strategic targets, much as the ACTS planners had intended in the 1920s and 1930s.

It was the Persian Gulf War, which highlighted this internal conflict. Official USAF doctrine was prepared to conduct strategic attacks on the enemy's warfighting potential. Yet General Charles Horner, the senior aviator in theater, was fully indoctrinated in the idea of AirLand Battle.[128] He fully intended to target, not the strategic centers of the Iraqi State, but the fielded Iraqi forces in support of U.S. Army operations.[129] This caused a dilemma when conflict actually broke out, because the Iraqis were not mobile, as the European-oriented AirLand Battle strategy assumed. Attacking second and third echelon forces would not have produced the expected impact on the battle. Meanwhile, the Gulf War's "Instant Thunder" plan (which finally ended up as only Phase 1 of the Gulf War air campaign) followed Warden's concept of the strategic air campaign fairly closely, and reflected a return to the roots of classical airpower theory. In the end, both concepts were used, and the tough decision of priority was never made.

Bush (1989-93). With the collapse of the Soviet Union in 1989, the Bush administration saw the demise of a military threat that had haunted the United States for almost 45 years. Threats to U.S. national security were no longer global, but regional.

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[127] Col John A. Warden, III, *The Air Campaign: Planning for Combat* (Washington, D.C.: National Defense University Press, 1988).

[128] Gen Horner describes himself as having been heavily influenced by Gen Creech. See Tom Clancy, *Every Man a Tiger* (New York: Putnam, 1999).

[129] It is argued that Army Generals Powell and Schwartzkopf both considered the Republican Guard as Iraq's center of gravity.

President Bush also faced the first major conventional confrontation since Korea in the 1990-1991 Gulf War. In many ways, President Bush faced fewer constraints on U.S. action, as there were relatively fewer concerns that this conflict might escalate into a major nuclear exchange with a preoccupied Soviet Union or geographically distant China. The world environment had changed dramatically, and the United States now stood as the sole world superpower, with no challenger in sight.

The AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force*, of March 1992 reflects these changes in the world environment and national security policy. The central theme of USAF air power was no longer centered around nuclear confrontation or deterrence; instead, this new doctrine focused substantially on conventional war. This document introduces the "Tenets of Airpower" which are those characteristics unique to air and space power employment. Also added to this document is a discussion of the operational level of war and the operational art, as well as the air campaign. Confident in its capability, the Air Force's new airpower doctrine also tentatively eschewed a reactive conventional combat capability, preferring instead a more proactive employment of conventional air forces. This new policy saw expression in the Air Force's *Global Reach -- Global Power* concept, which embodied the use of conventional long-range power projection and precision-bombing to counter regional threats.[130]

This doctrine also highlighted the dominance of the Fighter tribe. This tribe had been in control of the Air Force senior leadership for ten years, and its belief that airpower must be directed upon the adversary's fielded forces (rather than his strategic centers of gravity) was apparent in this version. But recent technological advances were now empowering other tribes. "By the late 1980s, then, the primary Air Force internal divisions revolved around technologies, with splits between pilots and all others; with

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[130] Reduction in forward deployment of forces during the 1990s also placed heavier reliance on power projection.

missiles beginning to assert a claim on a piece of the core, and between types of systems the pilots flew -- between fighter and bomber pilots, between transport pilots and 'combat' fliers, and even between air-to-air and deep interdiction pilots and close air support pilots."[131] The Gulf War proved to be a watershed in tribal dynamics. While the way it was conducted was the result of an Air Force controlled by the "fighter mafia," it also placed the spotlight on up-and-coming tribes. This new Post-Cold War policy "emphasized technology and rapid force projection, and it also emphasized expansions in the roles that space and information dominance will play in future conflicts."[132]

Clinton (1993-2001). The Clinton administration confronted a different world than that of previous presidents. The collapse of the Soviet Union, and the end of the Cold War, had created a very complex unpopular environment that defied any reliance on recent history for lessons. With no major threat, the United States focused on humanitarian interests such as Somalia, Bosnia and Kosovo. Engagements were proactive, not defensive, and often emphasized coalition building and casualty avoidance. This change in the world environment was accompanied by a change in the tone of Air Force doctrine.

Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, published in September 1997, demonstrates a marked departure from the reliance upon nuclear retaliation for deterrence found in the early doctrinal documents. This document is much more proactive, impressing on the reader the need for the military to shape the international environment, respond to the full spectrum of conflict, and prepare for an uncertain future.[133] It talks of war winning, not of deterrence and stalemates. It is often focused on a conventional force-on-force war, and the operational level of war. Concepts

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[131] James Smith, 9.

[132] Ibid., 10.

[133] "A key precept will be that those same forces will be increasingly called upon in peaceful military-to-military contacts, humanitarian intervention, peace support, and other nontraditional roles." AFDD 1. *Air Force Basic Doctrine*. September 1997, 5.

such as "decisive halt" and "culminating point" are terms of conventional conflict, not nuclear confrontations.

There is a noticeable minimization of the nuclear forces, and no mention of nuclear deterrence. In fact, this document strikes an almost apologetic tone with respect to the central role nuclear forces played in previous USAF doctrine. "In fact, many strategic actions tend to be non-nuclear conventional or special operations against more limited war or contingency operations objectives, and will increasingly include attack on an adversary's information and information systems."[134] Additionally, while certain principles like unity of command and offense have withstood the test of time, "other ideas, like unescorted daytime bombing, decentralized command, and the preeminence of nuclear weapons, have not."[135] This is a far cry from the original conceptions of airpower advocates from the early Air Force. What remains of strategic attack revolves around precision conventional weapons applied to selective targets.

There is, however, significant discussion of military operations other than war (MOOTW), the role of space, and information operations. "Information is now considered another medium in which some aspects of war can be conducted."[136] Information dominance, parallel warfare, mobility and ISR are also listed as elements of a new term "precision engagement." Parallel war also shows the increasing influence of the Delphic tribe. This version says "parallel force-application theory is not new, but its recent emphasis is essentially a product of the efficiency of high technology precision weapons, *command and control techniques*, *ISR systems*, and the resultant synergistic application"[137] (emphasis added).

AFDD-1 lists 17 "functions," or the fundamental activities of air and space power. This highlights a change from the "typical missions" listed in the doctrine of 1992 (see

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[134] Ibid., 52.
[135] Ibid., 74.
[136] Ibid., 7.
[137] Ibid., 24.

Table 1).   Seven of these functions are significantly different from the missions of 1992.[138]   Most of these new doctrinal functions for air and space power fall within the purview of the Delphic tribe.[139]

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[138] Countersea, counterinformation, command and control, intelligence, combat search and rescue, navigation and positioning, and weather services.

[139] All new functions are Delphic except Combat Search and Rescue (CSAR), and perhaps the countersea function. CSAR would constitute a separate tribe, while countersea incorporates many tribes. Mine-laying would be employed by bombers, sea surveillance would require space sensors or long range airborne ISR aircraft, and air refueling of navy aircraft for naval campaigns would be provided by the Mobility tribe.

Table 1. Changes from 1992 to 1997 USAF Doctrine

AFM 1-1, 1992[140]	AFDD-1, 1997[141]	
Aerospace Power	Air and Space	
Typical Missions	Power Functions	
Counterair	Counterair (includes Electronic Combat as SEAD)	
Counterspace	Counterspace	
Strategic Attack	Strategic Attack	
Interdiction	*	* These missions
Close Air Support	*	have been
	Counterland (includes Interdiction and CAS)	incorporated
	Countersea	into other.
	Counterinformation	functions.
	Command and Control	
Airlift	Airlift	
Air Refueling	Air Refueling	
Spacelift	Spacelift	
Electronic Combat	*	
	Intelligence	
Surveillance and Reconnaissance	Surveillance	
	Reconnaissance	
Special Operations	Special Operations	
	Combat Search and Rescue	

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140 AFM 1-1, 1992, 7. The "Force Support Typical Missions" have been left out of the AFM 1-1, 1992 table, as AFDD-1, 1997 does not consider these, admittedly crucial, missions as functions specific to air and space power.

141 AFDD-1, 1997, 45-60.

	Navigation and Positioning
	Weather Services

The Future Direction of Doctrine

In 1994, the Secretary of the Air Force, Dr. Sheila E. Widnall, and the Chief of Staff of the Air Force, General Ronald R. Fogleman, requested two studies of the future Air Force: "New World Vistas" and "AF 2025: America's Vigilant Edge." These two studies were intended to project future national security scenarios, and the technology necessary to meet them. Both indicate a need to move away from traditional thinking of airpower and weapon systems towards a new war-form.

New World Vistas. The *New World Vistas* study was conducted by the USAF Scientific Advisory Board. Their intent was to identify those technologies that would guarantee the air and space superiority of the United States in the 21st century.[142] Their findings generated several technological capabilities they believed fundamental to our future way of warfighting. "Global Awareness" includes the integration of sensors, communications, and processing capabilities able to collect and convert data into information useful for decision making. "Dynamic Planning and Execution Control" is the use of global awareness to allow real time decision making to optimize the employment of military capabilities. "Projection of Lethal and Sublethal Power" involves five new technologies, to include: uninhabited combat aerial vehicles directed energy weapons, next-generation stealth techniques, hypersonic air breathing platforms, and space-based weapons. "Space Operations" is another major field for technological development, ranging from global observation and situational awareness to force projection. "Global Mobility," while already important to USAF missions, can be improved by developing point of use delivery systems, low cost precision airdrop, and

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[142] *New World Vistas: Air and Space Power for the 21st Century*, Summary Volume, 3.

the "million pound airlifter." Finally, as always, the development and protection of "People" is crucial to the future Air Force.[143]

Air Force 2025. The *AF2025* study, led by Air University, included a large panel of military and civilian experts. This panel was asked to look 30 years into the future to identify those concepts, capabilities, and technologies the USAF would require to remain the dominant air and space force in the 21st century.[144] Throughout their deliberations, ten systems were highlighted as possessing the highest value for their contribution to maintaining air and space dominance through the year 2025.[145] Table 2 shows these "highest leverage systems" identified by the *AF2025* study.

Table 2. *AF2025* Highest Leverage Systems

Global Surveillance, Reconnaissance, Target System
Global Information Management System, Recon UAVs
Global Area Strike System
Space High Energy Laser
Solar High Energy Laser
Piloted Single Stage Space Plane
Attack Microbots
Sanctuary Bases
Uninhabited Combat Air Vehicles (UCAVs)

None of the weapons systems are manned (except, oddly enough, the space plane). Throughout the study, there is a distinctive de-emphasis of traditional "combat crewmember" roles, in favor of remote control of weapons and sensors. *AF2025* predicts

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[143] Interestingly, the *New World Vistas* study adds the following suggestion. "We must have a path for more scientific and technical officers to attain the highest positions in our Air Force. We, therefore, recommend that the Air Force officers who command laboratories be given the status and be treated in the promotion system like other operational wing commanders." *New World Vistas*, 62. The report goes on to say "the Air Force should consider career management of technically oriented officers with the same vigor as that of the rated forces." *New World Vistas*, 69. This is a clear indication of tribal competition, although it alludes to the existence of a "scientific" tribe not considered in this current study. In the same vein: "A pool of technical warriors is needed in the officer corps, with the means to choose or identify the best and to place them in senior leadership positions." Col J. Douglas Beason, "The Need for Technical Warriors," *Aerospace Power Journal* 14, no. 1 (Spring 2000): 70-6.

[144] *AF2025 Executive Summary* (Air University, Maxwell AFB, Ala.: Air University, 1996). CD

[145] Ibid., 25-7.

major battles among leading international powers may occur in space or cyberspace. Those who will be able to control the flow of knowledge will have the advantage. "It is not information itself which is important but the architecture of and infrastructure for its collection, processing, and distribution which will be critical. Increasingly, advantage is achieved through investments in information systems, decision-making structures, and communication architectures."[146] The study goes on to encourage the existing Air Force community not only to invest in these technologies, but also to prepare the organization to adapt to the new environment. "The USAF needs a commitment to information and space (and to the Air Force people whose expertise makes information and space capabilities possible) that is as passionate as was the commitment to a separate service and the early custodians of flight."[147] Such proposals seem to favor the ascendancy of the Delphic tribe within the Air Force leadership. There is even a proposal to create "weather warrior."[148] The *AF2025* study warns the Air Force to focus on the infosphere, not the atmosphere.[149]

    Bush (2001-present). At the time of this research, President George W. Bush has only been in office for a few months. He faces much the same environment as his predecessor, yet he is likely to pursue a different strategy. His national strategy will

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146 Ibid., 8.

147 *AF2025*, 15.

148 "The ability to generate precipitation, fog, and storms on earth or to modify space weather, improve communications through ionospheric modification (the use of ionospheric mirrors), and the production of artificial weather all are a part of an integrated set of technologies which can provide substantial increase in US, or degraded capability in an adversary, to achieve global awareness, reach, and power." *AF2025*, 55. Additional papers regarding the combat use of weather include: Lt Col John M. Lanicci, "Integrating Weather Exploitation into Airpower and Space Power Doctrine," *Air Chronicles*, Summer 1998, n.p., on-line, Internet, 17 April 2001, available from http://132.60.50.46/airchronicles/apj/apj98/sum98/lanicci.html; Maj Barry B. Coble, "Benign Weather Modification," Research Report (Maxwell AFB, Ala.: School of Advanced Airpower Studies, 1996); and Maj Ronald J. Celentano, et al., "Weather as a Force Multiplier: Owning the Weather in 2025," Research Report no. xxx (Maxwell AFB, Ala.: Air Command and Staff College, 1996), n.p., on-line, Internet, 17 April 2001, available from http://research.maxwell.af.mil/index.asp?menu=project.

149 "The new missions of the future are extended information dominance, global transparency, and strategic defense. They have nothing to do with the human mastery of flight. That was yesterday's problem." *AF2025*, 59.

probably be less active and more defensive, focused as it is on rogue states with an increasing threat of nuclear weapons housed on missiles that could reach the United States. Both he and his Secretary of Defense, Harold Rumsfeld, are proponents of a missile defense system and a strong space policy. While no programs have been affected, early speeches indicate general-purpose conventional forces may take a less important role, and strategic offensive weapons even less.

The Impact on Budgets[150]

The Total Obligation Authority (TOA) is the budget authority representing obligations that will result in outlays of funds in a particular fiscal year. Secretary of Defense Robert McNamara created ten Major Force Programs (MFPs) as a way to categorize this TOA spending.[151] These MFPs were created to organize Department of Defense expenditures along the lines of the missions they support. The four MFPs of interest to us are: MFP I, Strategic Forces; MFP II, General Purpose Forces; MFP III, Command, Control, Communications, Intelligence and Space (C3I/Space); and MFP IV, Mobility.[152] Strategic Forces programs consist of all strategic offensive and defensive weapon systems such as long-range bombers, intercontinental ballistic missiles (ICBMs), air defense systems, and satellites for attack warning. Programs defined as General Purpose Forces include all conventional (non-nuclear) combat units. The C3I/Space MFP encompass all programs involving command and control, intelligence, space, communications, weather and security systems. Mobility, for the Air Force, are those programs providing airlift and air refueling.

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[150] Much of the discussion on MFPs comes from the U.S. Weapon Systems Costs, 2000 and the U.S. Military Aircraft Data Book, 2000. See Futrell, vol. 1, 42, for McNamara's implementation of the MFP system, which was intended to match up "program packages" with the accomplishment of specific missions. This study focuses only on the USAF portion of the budget spending within these MFPs.

[151] An eleventh MFP, Special Operations, was added in 1986.

[152] Originally, MFP III was titled "Intelligence and Communications" and MFP IV was titled "Airlift/Sealift."

There are identifiable trends in the relative spending for these MFPs (see Figure 7 and Appendix A). Worden identifies the time at which spending for General Purpose Forces exceeded Strategic Forces (in FY66) as an initial indicator of the transfer of power from the bomber to fighter communities. The Kennedy administration's new "flexible response" strategy drove this change in budget priorities from strategic to conventional forces.[153] The demands of the Vietnam War also likely continued to pressure the Johnson Administration to maintain spending for conventional forces being used in the war. Much of this "transition" was not spurred from the Air Force senior leadership; it was driven by external forces. Sixteen years after this transition from strategic to general purpose forces spending, a fighter general became Chief of Staff of the Air Force.

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[153] For Kennedy's US defense policy priorities, see Futrell, vol. 2, 24-5. McNamara echoed this priority shift: "What is being proposed at this time is not a reversal of our existing national policy but an increase in our nonnuclear capabilities to provide a greater degree of versatility to our limited war forces." House, *Department of Defense Appropriations for 1962: Hearings before a Subcommittee of the Committee on Appropriations*, 87th Cong., 1st sess., 1961, pt. 3:176, as cited in Futrell, vol. 2, 30. Some scholars believe this transition to flexible response actually occurred during the last years of Eisenhower's term in office, following the crises in Lebanon and the Taiwan Straight (1958), plus the publication of US Army General Maxwell Taylor's *The Uncertain Trumpet*, in 1960. Warren A. Trest, *Air Force Roles and Missions: A History* (Washington, D.C.: Air Force History and Museums Program, 1998), 180-6.

Total Obligation Authority
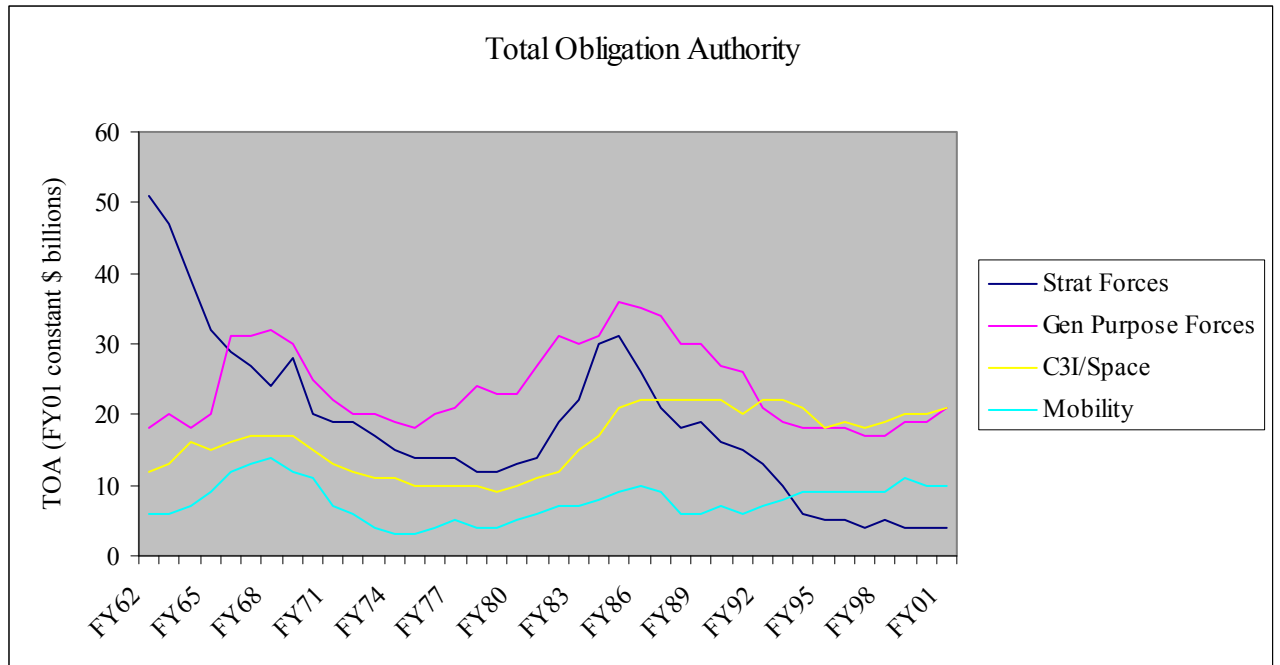
Source: Automated Budget Interactive Data Environment System

Figure 7. USAF Total Obligation Authority by Major Force Programs

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There is a caution in depending too heavily on these numbers to show the relative influence of different USAF tribes. To track the spending of each individual program is beyond the intent of this study. Yet the span of these MFPs covers several tribes. The Mobility MFP is aligned with the Mobility tribe, encompassing such systems as the C-17, C-130s and KC-10/135 programs. The Delphic tribe includes the C3I/Space MFP, but also possesses programs located within the General Purpose Forces MFP, such as the airborne ISR platforms (AWACS, and JSTARS), and satellite systems. General Purpose Forces, which incorporate most of the Fighter tribe systems, also includes the F-117 program, which could be argued as belonging to the Bomber tribe.

Also, not all programs have been "categorized" into their MFPs. As a result, many systems are still within the Research and Development MFP VI. This is traditionally the case with newer technologies, thus confusing any attempt to chart future spending priorities (and thus future tribal dominance) using newer programs. Many information operations and space systems (such as EELV and SBIRS), as well as the B-1B/B-2 programs, new conventional weapons (JDAMs), and data links (JTIDS) are still under the Research and Development MFP. Also, many programs are classified, and their descriptions and level of funding are unavailable.

Although the correlation is not precise, it still provides us with a helpful trend comparison. Expenditures for General Purpose Forces (the Fighter tribe) first exceeded the Strategic Forces (Bomber tribe) in 1966, and have maintained their dominance for much of the 1970s and 1980s. During the 1990s, spending for these programs declined drastically, slowing to a steady pace only in the late Clinton administration.

Within the Air Force, Strategic Forces have seen the most dramatic shifts in spending, often because they are the most costly USAF weapon system programs. While high during the Eisenhower administration's "massive retaliation" strategy, spending sharply declined during the Kennedy administration's turn toward a "flexible response." Strategic forces again enjoyed a dramatic increase in spending during the Reagan

administration.[154] This spending on strategic forces rapidly declined with the end of the Cold War.

The C3I/Space MFP (and the Delphic tribe) experienced relatively little spending until the Reagan administration, and then continued to increase during the Bush term. It was the only tribe that did not take significant cuts at the end of the Reagan years. The decline in spending during the Clinton administration was not nearly as severe to this MFP as to the Bomber or Fighter tribe programs. Spending for C3I/Space programs exceeded Strategic Forces in FY87, and surpassed General Purpose Forces in FY92.

Mobility expenditures are also strong. Spending for airlift has shown a slow but steady increase throughout all recent administrations, as the role of the United States military has increasingly become global.   The Kennedy/Johnson administrations increased spending for Mobility when they simultaneously pulled back many of their forces from overseas. This move toward "rapid deployment" placed a premium on air refueling of fighters, and the transport of Army forces overseas. This time period saw the development and production of the C-141 and C-5 aircraft. Mobility spending surpassed the budget for Strategic Forces in FY94.

Today we see a similar situation to that of the early 1960s. The second Bush administration has publicly called for a missile defense system. Defense Secretary Donald H. Rumsfeld is a widely recognized proponent of missile defense, as is Andrew W. Marshall, the Adviser to the Secretary of Defense for Net Assessment, who will be conducting the administration's first strategy review. Marshall has questioned the usefulness of such military mainstays as the Air Force's F-22 fighter, the Navy's aircraft carriers, and the Army's heavy tanks.[155] When looking at the AF TOA for FY01, we

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[154] This coincides with the final purchase of the MX missile and funding for 100 B-1B bombers. Also, six initial prototypes of the B-2 stealth bomber were funded in 1982. Interestingly, this is the same time period when Reagan appointed three successive submariners as Chief of Naval Operations, once again showing Reagan's emphasis on strategic (nuclear) forces.

[155] Thomas E. Ricks, "Pentagon Study May Bring Big Shake-Up," *Washington Post*, 9 February 2001.

note that the MFPs of both General Purpose Forces and C3I/Space are identical ($19 billion). Proposed plans for a missile defense system and an F-22 fighter program are big-ticket items, about which the Air Force could build fundamentally different, perhaps even mutually exclusive, war-fighting strategies. The decision to pursue a missile defense system (with its reliance on C3I/Space systems) at the expense of the F-22 and/or Joint Strike Fighter may well create a new preeminent tribe with respect to budget priority.[156] Due to the costs of these programs, any strategy based upon these very different systems will probably be long-term in duration. Preeminence based upon these budget decisions is therefore likely to continue for a significant period.

Summary of the Doctrine/Budget Trends

Air Force doctrine, originally built around the concept of strategic bombing of an adversary's vital centers, has developed over time. For much of the early period, the doctrine heavily emphasized strategic bombing against an industrial peer. This doctrine incorporated nuclear weapons, and a concept of deterrence ranging from massive retaliation to mutual assured destruction and the strategic triad. Beginning in the 1960s, doctrine began to look more closely at the lower end of the spectrum of warfare. This emphasis is now reaching its peak in the doctrine of the 1990s. However, new concepts of space warfare and battlespace dominance are being incorporated into USAF and joint doctrine. It is probably true that that these concepts will play an increasingly important role in doctrine as more combat experience is gained in these areas.

As the Air Force doctrine developed, it also reflected a change in the preeminence of tribes. When doctrine highlighted strategic bombing, the Air Force leadership was made up almost entirely of Bomber tribe generals. Budget priorities clearly favored SAC

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[156] Although initial funding for either program would be listed under the MFP of Research and Development, these programs would likely be moved to either Intel and Comms MFP or General Purpose Forces MFP once they had become operational.

and strategic weapons. As the doctrine focused more on limited warfare, Fighter tribe generals came into power. Budget spending favored tactical weapon systems. The increasing amount of attention USAF doctrine now gives to the Mobility and Delphic tribes is reflected in a steadily increasing share of the budget. It is difficult to discern the proper causal relationship; does an evolving doctrine (and the associated budget priorities) cause a change in leadership, or does the new leadership change the doctrine? Does the Air Force run the risk of skewed doctrine, if one tribe remains dominant? Does continued dominance limit the USAF to "old" traditional, out-of-date ways of fighting wars? Will the warriors who won the last war rise to the top, and try to fight the next war in the same way?

Chapter 5

TRIBAL CONFLICT ON THE FLIGHTLINE

Shifts in doctrine and budgets show themselves on the flightline, as changes in priority alter the acquisition of weapon systems associated with different tribes. Force structures, namely the number of weapon systems and USAF wings, fluctuate according to these priorities and can indicate changes in tribal preeminence. For example, the shift in budget priority from Strategic Forces to General Purpose Forces in 1966 was mirrored by a shift in force structure. Worden equates this to the ascendancy of the Fighter tribe, as "the force structure shift manifested itself in the number of fighters and especially the shrinking number of bombers available to fly."[157] By updating Worden's data, we can observe the steady decline in aircraft inventory since 1960 (see Figure 8).[158] But we may also compare the relative percentages of aircraft by tribe (see Figure 9).

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[157] Worden, 187.

[158] This data is from Air Force Association 2000 Almanac. The Delphic tribe equates to the AFA Almanac's "Recon/EW" category and the Mobility tribe equates to the "Airlift/AR" category.

Tribal Distribution of USAF Aircraft Inventory
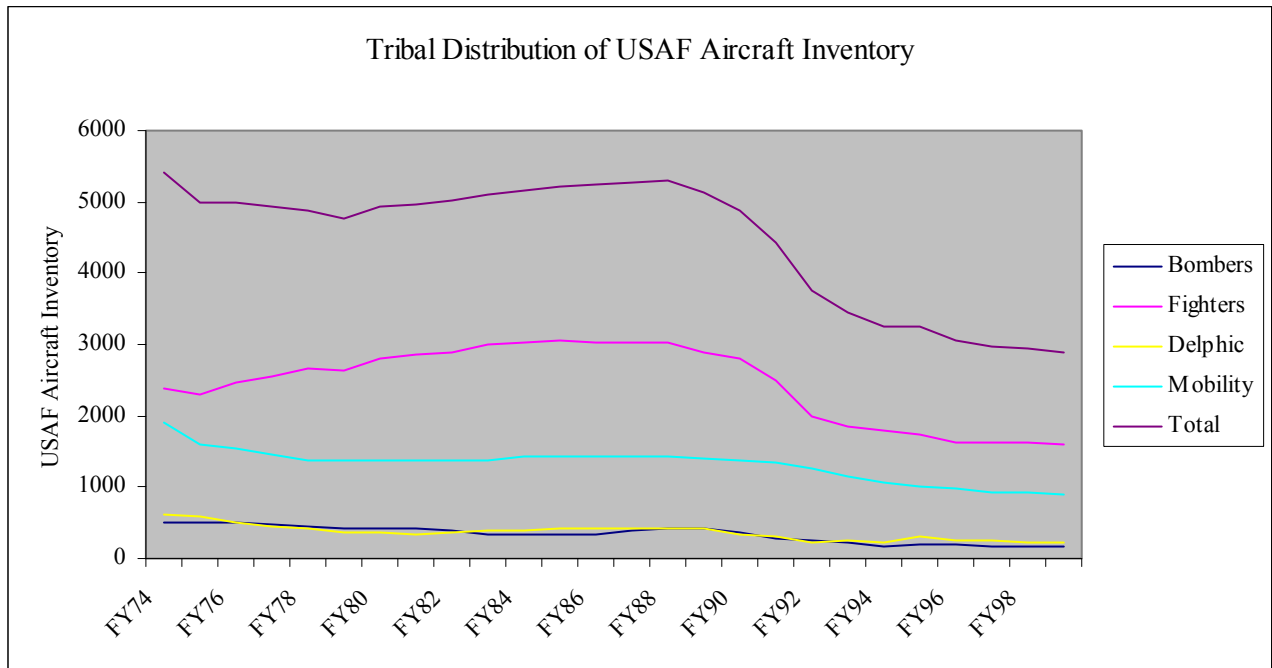
Source: Air Force Magazine 2000 Almanac.

Figure 8. Tribal Distribution of USAF Aircraft Inventory (Total)

Tribal Distribution of USAF Aircraft Inventory
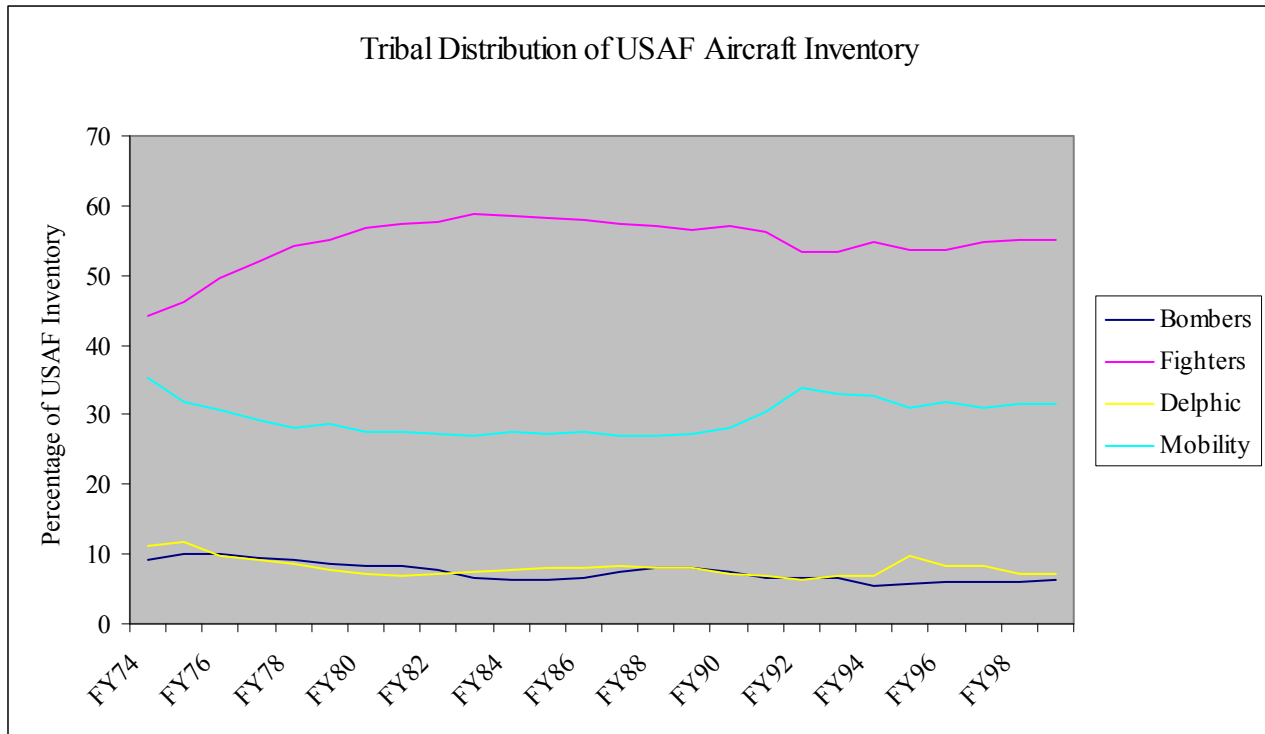
Source: Air Force Magazine 2000 Almanac.

Figure 9. Tribal Distribution of USAF Aircraft Inventory (Percentage)

United States Air Force Aircraft Inventory

We may discern trends coinciding with the different presidential administrations. Note that from 1980 to 1988 there was a steady increase in aircraft. Conversely, there were significant reduction in numbers, especially fighter aircraft, following the Vietnam and Gulf Wars. It is possible to observe different strategies of the various administrations. In general, almost every administration since the Vietnam War has seen a general decline in the aircraft inventory; it is the changes in strength relative to each other that proves interesting. Under the Reagan administration, there was a slow, but constant, increase in the number of aircraft within each tribe, but the percentages remained fairly stable. However under the Ford administration, the relative strength of fighters climbed dramatically (at the expense of airlift) while the opposite

occurred under the Bush administration. Also note that with the end of the Cold War, and American involvement in humanitarian operations, the demand for airlift aircraft, as well as ISR aircraft, has increased in importance relative to the other tribes. This is marked by the introduction of such new systems as the C-17, E-8 JSTARS, UAVs, and additional RC-135 Rivet Joint aircraft. The slowdown in production of all other major weapon systems programs, from the F-15 and F-16 to the B-1, B-2 and F-117, will slow the aircraft inventory of the bomber and fighter community to a standstill for the near-term. If we see the second Bush administration choose to emphasize a missile defense system over the acquisition of fighters such as the F-22 and Joint Strike Fighter (JSF), we can see how this will further influence the relative balance of weapon systems between the tribes.

Air Force Wings

Yet how do numbers of aircraft indicate tribal strength? The aircraft inventory may not be a good assessment of relative strengths of various tribes, and with some tribes (namely the Delphic tribe) it is difficult to correlate their capabilities solely upon numbers of "aircraft." The Fighter tribe may have only one officer per aircraft, while other tribes have multiple crewmembers (the extreme being entire organizations built around single space systems). But numbers of aircraft directly relate to the numbers of wings in the USAF organization. Worden states: "Flexible Response, and especially the Vietnam War, fostered the growth of tactical wings and the reduction of SAC wings."[159] See Figure 10 for his data, which again indicates 1966 as a turning point with respect to Bomber and Fighter tribal dominance. This is the last time when the number of Strategic Air Command Air Force wings compared favorably to the wings of Tactical Air Command (TAC).

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[159] Ibid., 187.

Tribal Distribution of USAF
Combat Air Force Wings
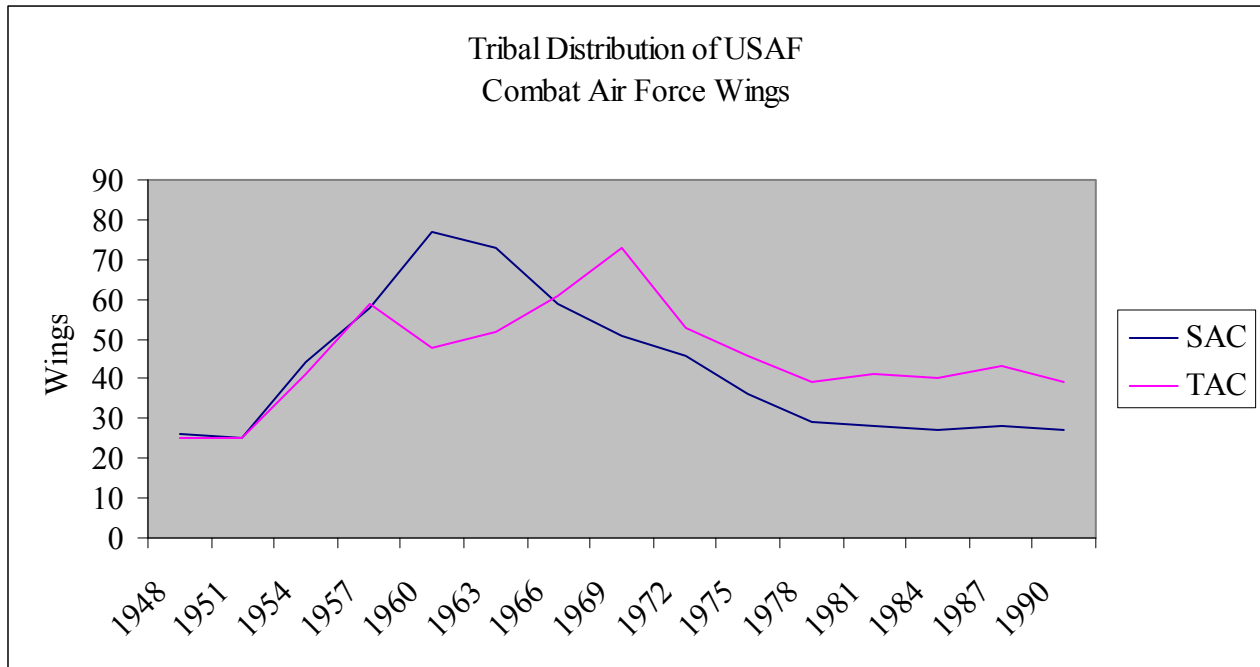
Source: Col Mike Worden, *Rise of the Fighter Generals*, p. 187.

Figure 10. Tribal Distribution of USAF Combat Air Force Wings (Col Mike Worden)

The relative strength of USAF wings and squadrons indicates where future senior military leaders are being "cultivated." During the Vietnam War, "more fighters meant more fighter pilots who manned more fighter wings and provided additional opportunities for leadership and command."[160] This still holds true today. Of current USAF four-star generals, 11 of 12 (92%) had been wing commanders at some point in their career.[161] When we look for future senior leaders, 32 of 40 current three-star generals (80%) had been wing commanders.[162] It is clear there is a strong correlation between being a wing commander and senior leadership. Tribes with few aircraft, and thus few wings, will produce relatively fewer officers with the leadership and command experience that helps them move up in rank.

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[160] Ibid., 188. "Almost without exception, rated BG selects were chosen from the pool of incumbent or graduated Wg/CCs." Evans, 16.

[161] The only one who had not been a wing commander has spent most of his career in the engineering field.

[162] Of the eight who have not served as a wing commander, most are from "support" backgrounds such as the medical and maintenance career fields.

Figure 11 shows the total number of USAF wings, and we can expect to see the numbers of wings decline as the number of aircraft decline and budget priorities focus away from defense spending. However, it is more beneficial to compare the active duty wings, as this is where the future senior leadership will arise (see Figure 12). It is clear that when looking at this variable, the Fighter tribe has maintained an advantage throughout the 1970s and 1980s, far exceeding all other tribes with respect to wings (and command opportunities). However, in 1992 we see the number plunge to 25 fighter wings, remaining fairly comparable to the Mobility tribe for the duration of our data. Meanwhile, although the total number of Mobility wings has declined slightly since the 1970s, they have assumed a much larger share of the current wing structure. Figure 13 shows the relative percentages of USAF wings per tribe.
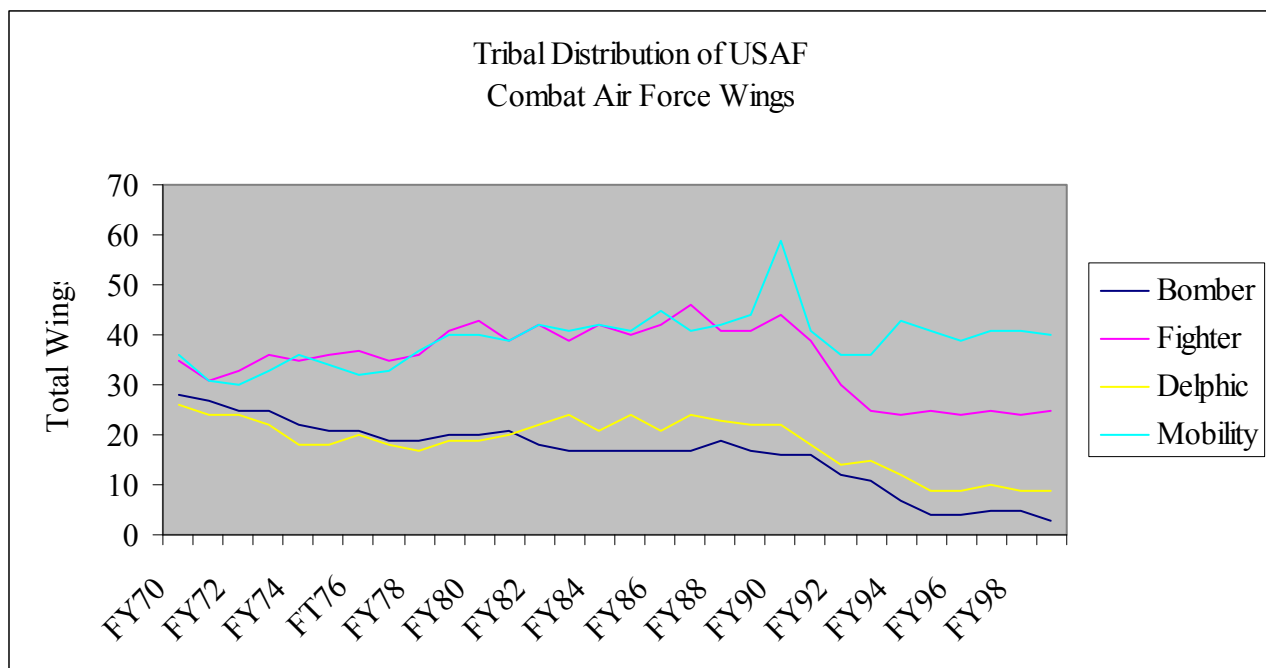
Source: Air Force Historical Research Agency.

Figure 11. Tribal Distribution of USAF Combat Air Force Wings (Total Wings)
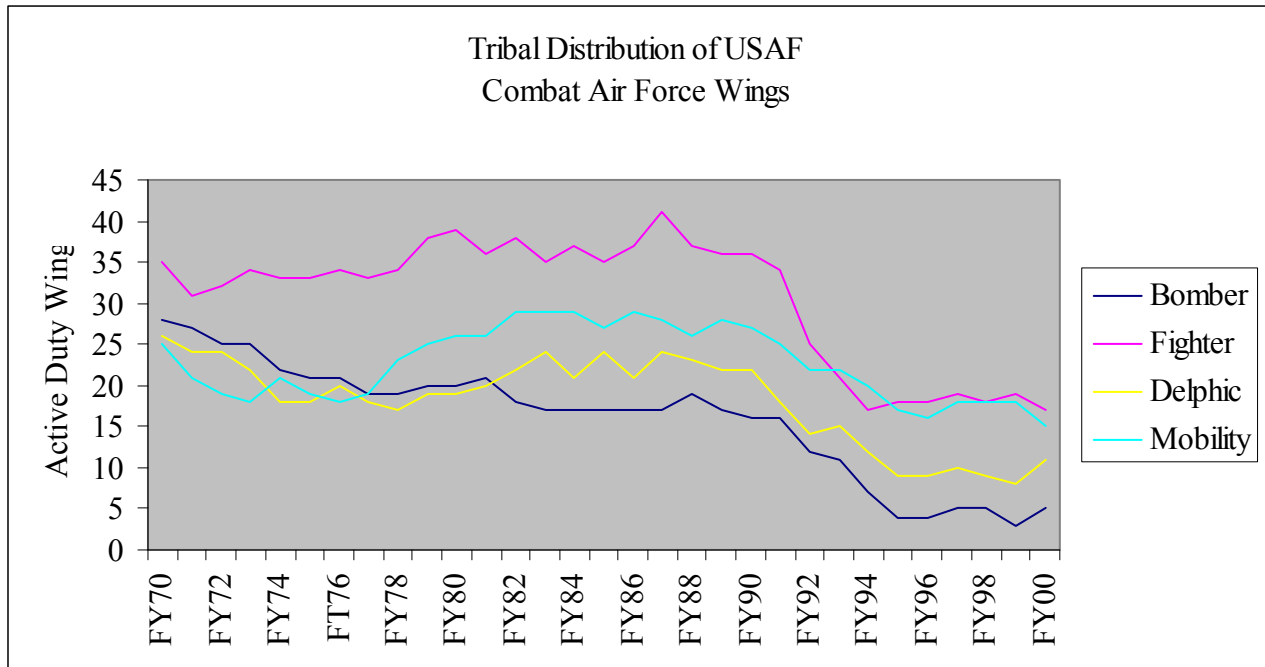
Figure 12. Tribal Distribution of USAF Combat Air Force Wings (Active Duty)

Source: Air Force Historical Research Agency.

**Tribal Distribution of USAF
Combat Air Force Wings**
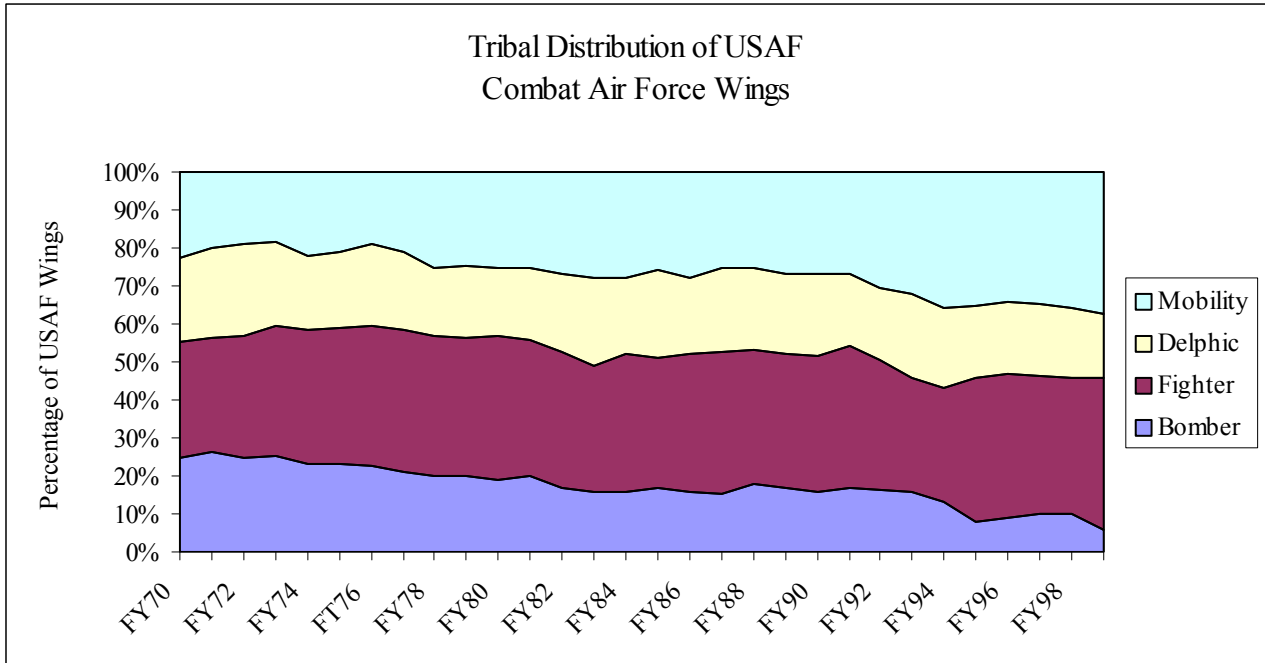
Source: Air Force Historical Research Agency.

Figure 13. Tribal Distribution of USAF Combat Air Force Wings (Percentage)

Meanwhile, the Bomber tribe has also declined in numbers of wings. This loss of strength relative to the other tribes is even more dramatic when we compare the percentages. While the number of fighter wings has ranged from 30% to 40% of all USAF active duty wings, bomber wings have declined from a high of 26% to a current level of 6%. Using this data, there is apparently little opportunity for officers of the Bomber tribe to gain leadership and command experience.

Assuming they remained within their tribe. When we look at the current wing commanders, we see a surprising allegiance to tribes (see Table 3).[163] All space wings are run by commanders with space backgrounds (as missileers). All bomber and fighter wings are commanded by their respective tribal members. Almost all airlift or air refueling wings are commanded by pilots of the Mobility tribe. Even the Numbered Air Force (NAF) commanders have experience reflecting the mission of the wings serving under them (i.e, the 8AF, which contains all the bomber wings, has a bomber NAF commander and both the 15th and 21st AF are run by commanders with airlift backgrounds).

The only odd-man out is the Delphic tribe. Of the four airborne ISR wings, two are run by commanders with bomber background, and two with a fighter background.[164] Not one ISR wing is commanded by an officer with operational experience in their ISR system.[165] Despite the fact that most of the crewmembers on such aircraft are not pilots, almost every wing

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[163] All discussion of wing commanders is based upon a survey of 70 "Combat Air Force" wings. This term includes all wings with weapon systems, excluding such units as air base wings and training schools. The data regarding wing commanders tribal membership may be suspect. Of the 70 wings considered, 21 biographies of commanders were unavailable (many officers of the O-6 rank do not publicly post their biographies). This number is statistically significant, but should not negate conclusions made in this study. Not included is Air Intelligence Agency, which nonetheless is commanded by a fighter pilot. Conclusions are based on known FY00 data.

[164] This includes the 9RW (U-2); 55WG (RC-135, E-4); 93ACW (E-8); and 552ACW (E-3). UAVs are incorporated into the predominantly fighter-oriented 57WG.

[165] "Analysis of the career demographics of current 'space leadership' indicates the Air Force has departed from the leadership development model used throughout the flying forces. That model trained airmen to operate their weapon system, honed their proficiency to unsurpassed skill levels, prepared them to manage their force structure, then selected the best of them for senior leadership positions. The same has not been true for space forces." Lt Col D. Tom Clark, "The Transition to a Space and Air Force: Proposed Solutions to the Dilemma," Research Report no. 97-030 (Maxwell AFB, Ala.: Air War College, 1997), 20-36.

commander is a pilot.[166] Also, two commanders of NAFs responsible for ISR assets are fighter

pilots.[167] It is also interesting to note that there are six wings with a mix of aircraft that cross

tribal lines.[168] All six of these wings are run by fighter pilots; apparently all "ties" go to the

Fighter tribe. Thus is it possible for the Fighter and Bomber tribes to maintain their production

line of future commanders, at the expense of the Delphic tribe.[169] Additionally, there are no

command positions at the wing level for weather, communications or information systems

specialists.

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[166] Although all tribes except for the Fighter tribe have multi-person crews, these communities are still dominated by pilots, especially at the wing commander level. The only notable exception is within the space community, although even there the senior leaders of US Space Command are Fighter tribe pilots.

[167] Including 12AF and 14AF.

[168] Combined wings include: 18 WG, 347 WG, 355 WG, 366 WG, 363 Air Expeditionary Force (Southern Watch), and Combined Task Force (Northern Watch).

[169] One might argue that enough time has not passed to produce a sufficient pool of officers with both Delphic operational experience and enough seniority to be included in senior leadership. "The AF created its first operational command for space less than 15 years ago, so one could argue that there has not been sufficient time to 'grow' a corps of operationally experienced space leaders. That, however, is not a valid argument when one is reminded that regardless of the organizational structure within the AF, someone operated the systems under Strategic Air Command (SAC) and Air Force Systems Command guidance. So where have all those space operators gone, and why did the AF fail to cultivate the requisite leadership base from which to choose its space leaders?" Clark, 27-8. Similarly, the AWACS community has been in existence since the 552nd Air Control Wing first stood up on 1 July 1976, although several Airborne Early Warning and Control (AEW&C) Wings existed prior to this date (the 551st and 552nd AEW&C Wings were activated in 1955, while the 553 Reconnaissance Wing was activated in 1967). History, 551st / 552nd / 553rd Wings, n.p., on-line, Internet, 25 April 2001, available from http://www.dean-boys.com/reunion/wing_histories.htm. Air battle managers were not approved to be squadron commanders until 1996. The first reconnaissance KC-135 was fielded in 1961, with RB-47s and similar reconnaissance aircraft well before this period. See Robert S. Hopkins, III, *Boeing KC-135 Stratotanker: More than just a Tanker* (Leicester, England: Midland Publishing Limited, 1997), 135. The Joint STARS community is perhaps too young to have developed its own leaders (having been stood up only in 1996) but many of the officers in this organization are from the AWACS and RJ communities.

Table 3. Tribal Distribution of USAF Combat Air Force Wing Commanders

Source: USAF Biographies website.

5 Bmbr Wgs	17 Ftr Wgs	11 Delphic Wgs	15 Mob Wgs	1 SpecOps Wg	7 Wg/AEF	14 Trng Wgs
2 x Bmbr		2 x Bmbr	1 x Bmbr			
	14 x F	1 x Ftr			6 x Ftr	2 x Ftr
		7 x Delphic				1 x Delphic
			9 x Mob			2 x Mob
						1 x Other
3 x Unknown	3 x Unknown	1 x Unknown	5 x Unknown	1 x Unknown	1 x Unknown	8 x Unknown
NAF CCs:						
1 x Bmbr	8 x Ftr	1 x Delphic	4 x Mob	1 x Other		

Summary of USAF Wing Trends

Force structure reflects changing priorities in doctrine and budget. As the emphasis focuses on new doctrinal concepts of employment, and budgets favor new types of systems, the force structure will be adapted to meet these new priorities. This, in turn, could have an impact on future USAF elite cadre as leadership opportunities increase for the tribes "in favor." However, this correlation only exists if the tribal wings are indeed led by members grown from within that tribe. So long as tribal leadership positions are filled by members of other tribes, their path toward senior leadership will be impeded. So long as the preeminent tribes are able to cultivate their future commanders within other tribal units, their pool of future senior leaders will probably remain larger and their preeminence will be maintained.

Does this indicate future tribal preeminence? Future predictions are difficult to make while doctrine and budget priorities are still in question. If the planned fighter aircraft programs (F-22 and JSF) are continued, then aircraft inventory and USAF wings will still favor the Fighter tribe. If, however, a missile defense program is pursued at the expense of these programs, and if officers from within the Delphic tribe are selected to command the units which control these systems, then the Delphic tribe will produce a relatively larger pool of officers from which the future elite cadre will be drawn. A similar result would occur if national security policy began to favor a defensive, intelligence-based strategy rather than the force projection strategy of today. If national policy continues with nation-building and humanitarian relief missions, then the Mobility tribe's role may increase relative to the other tribes. This conclusion assumes, of course, that commanders of tribal units will be cultivated from within the tribes. As we have seen, current USAF policy does not necessarily reflect this case for the Delphic tribe [170]. There

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[170] The *Commission to Assess United States National Security Space Management and Organization* (hereafter referred to as "2001 Space Commission") (11 January 2001) chaired by Donald H. Rumsfeld specifically recommended "the Secretary of Defense should end the practice of assigning only Air Force flight-rated officers to the position of CINCSPACE and CINCNORAD to ensure that an officer from any Service with an understanding of combat and space could be assigned to this position." xxxiii. This may meet some bureaucratic resistance: "It is currently impossible to assess how much needs to be done in this area, however, as the Air Force categorically refuses to release information about promotion rates for officers in the space career field, even to researchers within

are other variables we must examine that may play a role in the selection of future USAF senior

leadership.

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the service. This policy raises the question of what's being hidden and casts serious doubt upon the Air Force's current commitment to make such changes." Lt Col Peter Hays and Karl Mueller, "Going Boldly--Where? Aerospace Integration, the Space Commission, and the Air Force's Vision for Space," *Aerospace Power Journal* 15, no. 1 (Spring 2001): 49. See also, Maj Bruce McClintock, "The Transformation Trinity: The Role of Vision, Culture, and Assessment in Strategic Innovation" (masters thesis, School of Advanced Airpower Studies, Maxwell AFB, Ala.: June 2000), 56-7.

Chapter 6

Education and Experience

This study has neglected several additional possible explanations for the attainment of senior leadership positions by some military officers as opposed to others. Morris Janowitz proposes that interpersonal skills of "communication, persuasion, and negotiation" are keys to promotion into the elite cadre.[171] Samuel Huntington has noted religion, or geographic location of birth may be factors. One popular myth is that an inordinate number of senior leaders part their hair on the left side.[172] Another obvious variable is marital status; every USAF Chief of Staff has been married. There are an endless number of factors that may contribute to the progress of individual officers into the senior positions, and may even have statistical significance. The most important deal with an officer's education and career experience. Unfortunately, some of these variables are irrelevant or not measurable. Other variables apply across tribal lines, and do not explain why certain career fields have enjoyed disproportionate preeminence vis a vis other career fields. What follows is a brief discussion of some of the more credible variables, and the justification for excluding them from this study.

USAF Academy

Perhaps attendance at one of the military academies is conducive to achieving senior positions. This is a widely-held view within the Air Force; in his classic study of

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[171] Janowitz, 74.

[172] Only two of the USAF Chiefs of staff parted their hair on the right.

the military professional, Morris Janowitz stated the common perception that "the history of professionalization of military leadership has established the principle that top posts should be assigned to graduates of the service academies."[173] This view was recently echoed in an article presented by Air Force Times.[174] Certainly, Janowitz' "elite cadre" for the Army and Navy have historically been supplied by the military academies of the older services.[175] Current Navy senior leadership, for example, is much more heavily populated by U.S. Naval Academy graduates than found in the Air Force (see Figure 14). But this does not appear to be as strong for the Air Force. Academy graduates make up 59.4% of Navy, and only 34.6% of Air Force, senior leadership.[176] The often-held perception that the Chief of Staff must be an Academy graduate does not appear sacrosanct. Ten of the first thirteen USAF Chiefs of Staff were graduates of West Point.[177] Since then, the position has been held by two Air Force Academy graduates, but also one ROTC graduate.[178] Figure 15 shows that, despite popular misperception, the percentages of officers from the Academy and ROTC remains fairly evenly divided at the most senior ranks.[179]

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[173] Janowitz, 56. For a broader account of the role of the military academies, see Janowitz, 55-74, 104-8.

[174] Jennifer Palmer, "Who Makes the Better Officer?" *Air Force Times*, 27 November 2000, 12-5.

[175] Seventeen of the twenty US Army Chief of Staff since World War II have been graduates of the US Military Academy. All but two of the eighteen Chiefs of Naval Operations since WWII have been Naval Academy graduates. In Janowitz' survey in 1950, 73.8% of all 3, 4, and 5-star Army generals and 100% of all Navy 3 and 4-star admirals were graduates of a military academy, while only 41.2% of Air Force generals were graduates from West Point. Janowitz, 59. This was largely due to the rapid expansion of personnel during WWII through the Aviation Cadet program. Janowitz proposes that, given a relatively stable peacetime force level, the Army and Air Force will again match the Navy for reliance on academy graduates for senior leadership. Janowitz, 60.

[176] Senior leadership implies 3 and 4-star flag officers.

[177] Gen LeMay received his commission through the Air Corps Reserve program; Generals Jones and Welch were commissioned through the Army Aviation Cadet program.

[178] Discounting two USAFA graduates who temporarily held the position as "acting" Chief of Staff. This indicates an average of 75% Academy graduates as the most senior USAF general officer, as compared to 89% of the Navy's Chiefs of Naval Operations and 85% of Army Chiefs of Staff since World War II have been Academy graduates. See Chapter 7 of this research.

[179] It is clear from the data that the percentage of officers commissioned through ROTC remains fairly constant, while the percentage of Academy graduates increases seemingly at the expense of officers commissioned through the Officer Training School. OTS graduates often have prior enlisted military service, and are therefore likely to be older (and thus will retire at an earlier rank) than officers commissioned from the Academy or ROTC programs.

USN Senior Leadership

USNA (14)
ROTC (0)
OCS (1)
Other (0)
Unknown (12)

59%
38%
3%
0%
0%

USAF Senior Leadership

USAFA (18)
ROTC (26)
OTS (6)
Other (2)
Unknown (0)

35%
49%
12%
4%
0%
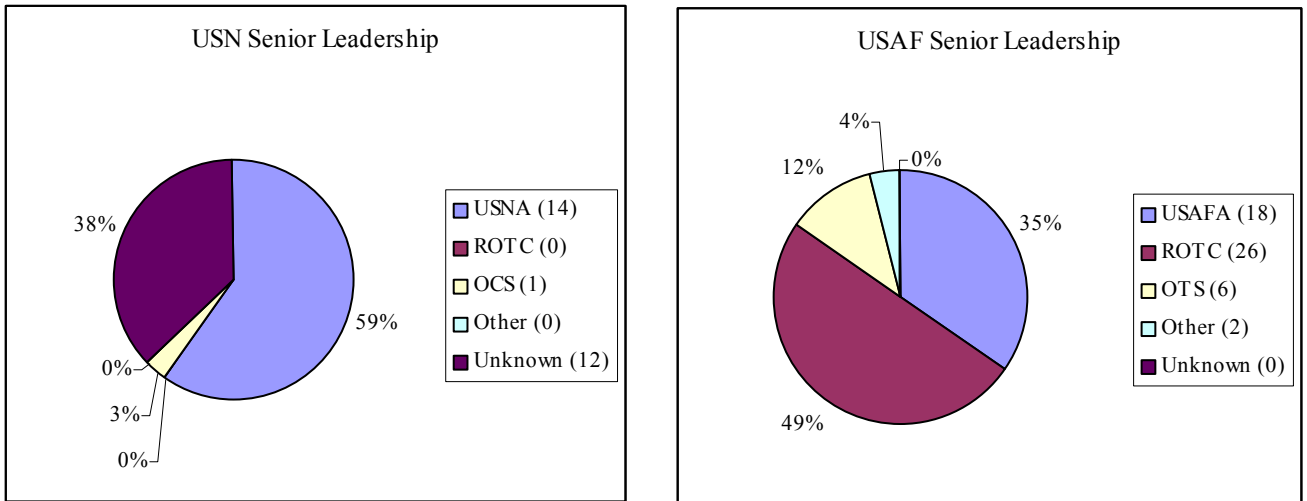
Source: USN and USAF Biographies website.

Figure 14. Commissioning Source of Senior USN and USAF Officers

Commissioning Source of USAF Officers

Other
OTS
ROTC
USAFA

2Lt   1Lt   Capt   Maj   LtCol   Col   O-7   O-8   O-9   O-10
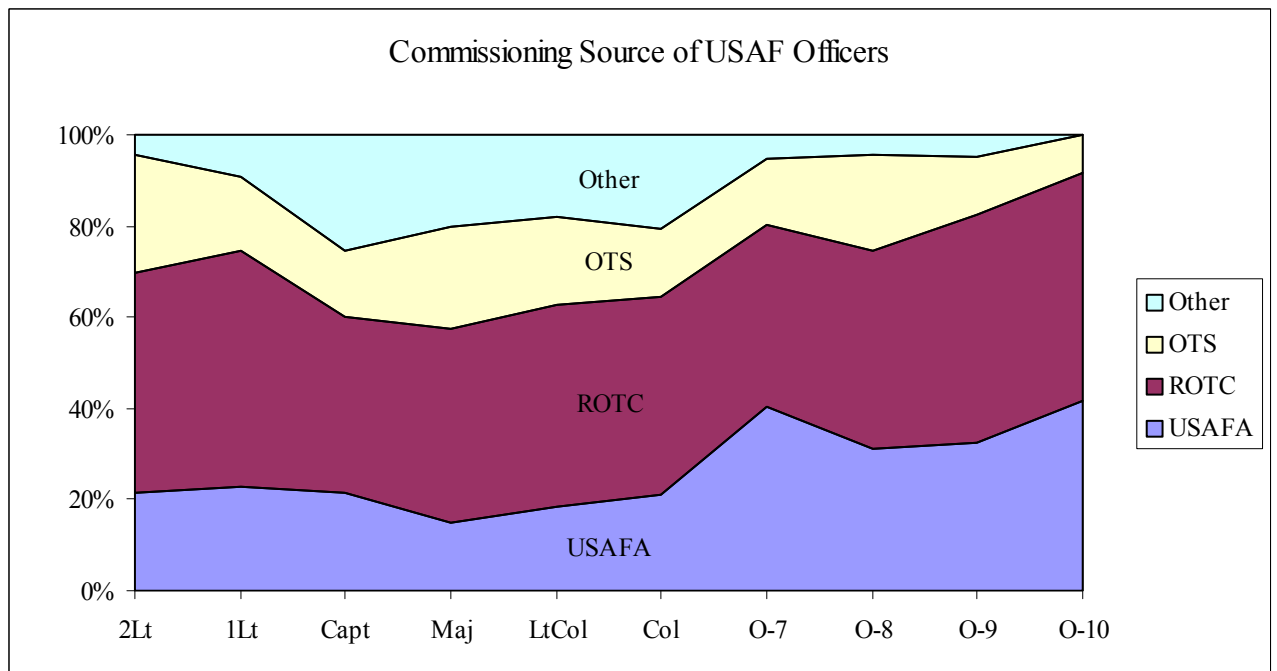
Source: Interactive Demographics Analysis System, Air Force Personnel Center.

Figure 15. Commissioning Source of USAF Officers

Certainly, the USAF Academy plays an important role in developing the professional ethic of USAF officers. Indeed, the Air Force Academy is the largest single commissioning institution for Air Force officers. "The academies set the standards of behavior for the whole military profession."[180] Despite John Sherwood's assertions to the contrary, the long-term "imprint" on an officer attending the Academy may be comparable, or even greater, than the effect of pilot training, or weapon system specialty training.[181] The Academy culture may even compete with (but hopefully only complement) the officer's first tour in his or her weapon system.[182] However, the Academy effect, or the imprint of *any* particular commissioning source, has no apparent significant influence on tribal preeminence.[183] There are comparable numbers of officers from all commissioning sources in most career fields and at all levels of rank. Thus, this variable may be negated from consideration. Although career progression may slightly favor Academy graduates in some ways (such as promotions, or selection as USAF Chief of Staff), the effect of "Academy dominance" does not appear as dramatically as in the other services. It appears a fighter pilot may just be a fighter pilot, no matter what the commissioning source. Thus this research concludes that it is the career field, and not the commissioning source, that has the most significant effect on achieving senior rank.

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[180] Janowitz, 127.

[181] For his observation that attendance at a military academy did not have a significant impact on the young USAF officer corps, see Chapter 2, "Absence of Ring-Knockers: The Social Background and Education of Flight Suit Officers," in Sherwood, 11-36.

[182] As a result of his culture survey, James Smith believes the impact of commissioning source is negligible; "While source of commission is often seen as a primary shaping influence on culture and attitudes, any differential effects may not survive the common influences of service in the USAF." James Smith, 23.

[183] There is possibly one exception. Approximately 44.2% of all USAF pilots are Academy graduates, while 43.0% are ROTC graduates and 12.5% were commissioned through OTS. All other career fields (navigators, air battle managers, non-rated line officers) are overwhelmingly populated from ROTC or OTS programs. Although Academy graduates represent less than half of the pilot community (44.2%), almost half of every class goes into the pilot community (40.7%, as opposed to only 18.4% of all ROTC graduates become pilots). This shows an obvious pooling of Academy graduates in the pilot career field. Data from AFPC's IDEAS database, representing all O-1s through O-5s, as of 30 November 2000.

Professional Military Education

Air Force professional military education (PME) "provides Air Force personnel with the skills and knowledge to make sound decisions in progressively more demanding leadership positions within the national security environment."[184] Since 1946, the USAF has used a three-tiered system of PME to prepare officers for the next higher levels of military service. One of Worden's main conclusions is that education was an important discriminator for senior leadership, and that it was the fighter tribe who was able to pursue more educational opportunities than its bomber tribe counterpart.[185] This inequality in education may have been one factor leading to the downfall of the Bomber tribe. Thus, educational achievement may be an indicator, if one tribe benefits more than others.

Although advanced education may now be considered a requirement for senior leadership, it can no longer be considered a indicator for tribal preeminence. Advanced education is universal. Almost all lieutenant colonels and colonels have advanced university degrees (97.5% and 98.6 % respectively).[186] Unfortunately, AFPC's IDEAS data does not break down education information for pilot and navigator AFSCs sufficiently to compare the education achievements of different tribes. But unless it can be shown that only specific tribe members (such as only fighter pilots, or only mobility navigators) receive advanced education, then the existing data indicates advanced degrees can no longer identify dominant tribes.

We can draw similar conclusions for professional military education. According to senior leadership records, a vast majority of general officers have attended some form

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[184] Air Force Instruction (AFI) 36-2301, *Professional Military Education*, 1 June 2000, 1.

[185] "Fighter pilots were generally made more available for professional military and graduate schooling than bomber pilots." Worden, 72-3. See also Worden, 114-5, 213-4, 236-8. Vance Mitchell also tracks changes in education and PME attendance with time, noting the trend from 1950 to 1970 shows more general officers attending PME. There is a notable exception; extended periods of combat lead to a corresponding decrease in educational opportunities for officers. Mitchell, 295.

[186] IDEAS data for FY00.

of PME. However, attendance at Squadron Officers School is almost universal in the Air Force, so this is not a valuable discriminator. The Air Force's intermediate service school, Air Command and Staff College (ACSC), is more limited in its attendance and may be more valuable for tracking the selection of officers by their career field. Over time, this might indicate changes in priority within the Air Force. For example, it might be valuable to determine if more or fewer space operators are chosen to attend ACSC now than in 1980 or 1990. Unfortunately, ACSC and AFPC representatives claim they do not keep historical data for ACSC attendance by AFSC.[187] What information is available from AFPC's database is limited to FY94 onwards, so tracking long-term trends is difficult. This data also does not indicate attendance for each year, but only reveals the number of officers who have attended at some point in their career. ACSC attendance, although promising, could therefore not be used for tracking tribal relations. What might prove more revealing is to track the changing curriculum taught at ACSC. This might reveal, like USAF doctrine, a change in emphasis over time, which favors one tribe over the others.

Perhaps it is not attendance, but performance that matter as a discriminator. Every senior leader has attended professional military education. As Janowitz points out, "the link between academic performance at the service academies and subsequent career success is difficult to discern; however, performance at the higher military schools plays a greater role in elite selection."[188] This may become more important with time. The percentage of distinguished graduates (DGs) progressively increases with decreasing rank in the senior levels of the Air Force. While only 16.7% of USAF four-star generals were DGs in any PME course, it increases with lieutenant generals (17.5%), major generals

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[187] The author of this research was unable to obtain rates for selection to PME with respect to career fields. Numerous officers contacted at ACSC and AFPC said they do not maintain such records, despite indications that ACSC seminars are arranged for equal distribution of students by AFSC. This difficulty in finding data by career field is mirrored by Maj McClintock, 57.
[188] Janowitz, 140.

(24.4%) and brigadier generals (27.2%). This may indicate generational characteristics, as the Post-Vietnam Generation replaces the Vietnam Generation in senior positions. This phenomenon may be a result of changing promotion criteria, as boards use DG selection as an important requirement for promotion. Or perhaps it is a "topping out" of non-aviators who achieved their senior rank in their limited career fields precisely because of their PME achievement, but will proceed no further up into senior leadership (thus evening out the percentages). It would also be difficult to determine the numbers of officers who might have been DGs, but were *not* accepted into the elite cadre. This data would help in defining DG status as a criterion for elite selection. In any case, there is not evidence that one tribe receives more DGs than another, so this variable is not used in this research.

Finally, perhaps it is the PME school attended that matters. One might assume the Air War College (AWC), sitting atop the Air Force PME pyramids, would be the location for preparing the future elite.[189] However, this does not appear to be the case. Nine of the current twelve 4-star generals attended National War College (NWC), while only one attended AWC.[190] Unfortunately, it is difficult to determine the role of attending NWC. A researcher would have to follow the careers of *all* NWC students, to see how attendance affected their career progression. One might also ask what criterion is being used to select officers showing "great potential" to attend the NWC rather than one of the other senior service schools. This decision is often made at the Lt. Colonel rank, so may we surmise the pool from which future senior USAF leadership will be selected is determined at this early stage in a career? If so, then does an officer's

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[189] "Senior lieutenant colonels and junior colonels selected to attend the ten-month Air War College were the service's future elites, those with the greatest perceived potential for flag rank. That made the AWC of critical importance in broadening the backgrounds of those most likely to become the service's senior commanders and policy makers." Vance Mitchell, 290.

[190] Fourteen of the forty 3-stars likewise attended NWC. "A student at the National War College ... I knew that graduation from this highest of the service institutions was virtually a prerequisite for promotion to flag rank. This was the route I would have to go if I was ever to become a general." Robert L. Scott, *The Day I Owned the Sky,* (New York: Bantam Books, 1988), 115.

operational level of experience, obtained during the earliest years of a career, become even *more* important? These questions might provide fodder for future research.

USAF Weapons School Attendance

There is one training opportunity that does stand out as a discriminator for senior leadership: the United States Air Force Weapons School. Only 120 to 140 students attend this school each year, which represents less than 3% of the USAF officer population, yet school graduates represent 25% of all four-star generals.[191] Figure 16 indicates that as you progress in rank, the percentage of Weapons School graduates also increases. This highlights it as a possible discriminator for selection into the elite cadre. Attendance at the USAF Weapon School thus provides another indicator of the changing tribal relationships.

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[191] The school attendance calculation is based on an officer population of 4756, which is the AFPC IDEAS FY00 data for the personnel of the 1992 year group. This calculation assumes typical attendance at USAFWS is at the eight-year point of an officer's career. Changing year groups does not significantly change the value, which remains between two and three percent of an entire officer group.
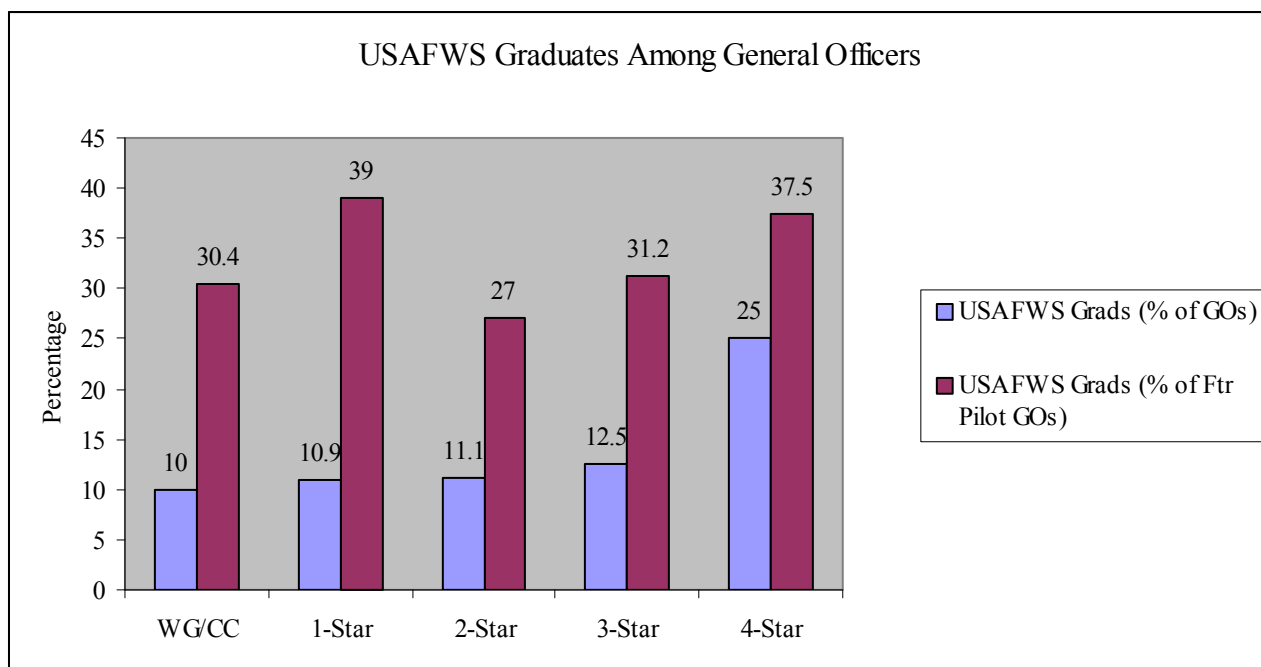
Source: USAF Biographies website.

Figure 16. Percentage of USAF Weapons School Graduates Among General Officers

History. Located at Nellis AFB, NV (with detachments at Ellsworth AFB, SD and Barksdale AFB, LA), the Weapons School is the premier USAF school for instructing weapons and tactics employment to officers of the combat air forces (CAF). The USAF Weapons School first developed from a corps of highly skilled World War II fighter pilots who, after the war, got together for the purpose of passing on their expertise to others for future combat. In 1954, the school became known as the USAF Fighter Weapon School, with the primary mission of training gunnery to its fighter pilots. Over the years, this role has expanded to include all USAF fighter aircraft. As new aircraft entered the inventory, more Weapons Instructor Courses were added to the school curriculum. Its primary mission is now to prepare highly trained instructors to return to the CAF to "provide the world's most advanced training in weapons and tactics

employment to officers of the combat air forces."[192] Today the school is comprised of Weapons Instructor Courses for the A-10, B-1, B-52, F-15C, F-15E, F-16C, HH-60, Command and Control Operations, Intelligence, and Space disciplines.[193] Graduates are experts on weapons, weapons systems, weapons system integration, and employment tactics, procedures, and techniques.

Patch Effect. The USAFWS is considered to be one of the Air Force's elite schools in warfighting. Successful completion of the five-month course is a mark of distinction, accompanied by a special shoulder patch that signifies a Weapons School graduate as a "patch wearer." These officers, and the skills they acquire, have often formed the core of recent combat mission planning and execution cells.[194] Along with this honor comes a "patch effect," often used as a discriminator in promotions and assignments. "Personnel people ... knew this pilot needed to be handled specially, not only because of his special training, but also because of the Air Force's huge investment in him. For that reason, patch wearers were more likely to be assigned the good flying jobs."[195]

Tribes. The Weapons School has long been a bastion for the Fighter tribe. Even its title of "USAF Fighter Weapons School" (from 1953 to 1992) and its host base of

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[192] The official USAF Weapons School website can be accessed at: http://www.nellis.af.mil/usafws/Default.htm. Data in this section was obtained by accessing the website on 15 February 2001.

[193] The command and control operations division includes air weapons controllers from ground and E-3 AWACS units, and electronic warfare officers from the RC-135 V/W Rivet Joint and EC-130H Compass Call communities.

[194] "The Fighter Weapons School (FWS) ... is a graduate-level tactics school that cultivates aggressive problem solving in a select group of USAF crews. Once back in their squadrons, FWS graduates ... provide a foundation of tactical know-how and problem solving within the unit. The thinking, teaching, and flying conducted at this center would have a powerful influence on USAF conduct in the Gulf War." Lt Col William F. Andrews, *Airpower Against An Army: Challenge and Response in CENTAF's Duel with the Republican Guard* (Maxwell AFB: Ala.: Air University Press, 1998), 21. "One measure of the effectiveness of WS training is aircrew performance during Desert Storm where only 7% of the crews had successfully completed WS, but 66% of the air-to-air kills were accomplished by WS grads." Tom Clancy, *Fighter Wing: A Guided Tour of an Air Force Combat Wing,* (New York: Berkley Books, 1995), 248. See also Col Robert C. Owen, *Deliberate Force: A Case Study in Effective Air Campaigning* (Maxwell AFB, Ala.: Air University Press, 2000), 322, 326.

[195] Clancy, *Every Man a Tiger*, 119.

Nellis nickname of "Fightertown, USA" gives it a distinctive "Fighter tribe" mentality. The Weapons School plays an especially significant role in fighter pilot career progression; of all fighter pilot general officers, one third are graduates of USAFWS. At higher ranks, as fighter pilots make up more and more of the positions, the representation of "patch wearers" also increases. Beginning in 1984, but accelerated since 1992, other tribes have moved in. As more bomber and ISR, and later Mobility tribe assets were added to the curriculum, the tribal dynamics of this elite school have changed.

    Attendance. By comparing the attendance rates of the Weapons School, we find an interesting dynamic between the various tribes. Since Weapons School divisions are divided up along weapon system, it should be easy to assess tribal membership of students. Figure 17 shows the attendance at the Weapons School according to weapon system.[196] Notice the increasing attendance at the School, as new Weapons Instructor Courses are added to accommodate the increasing need of the CAF for such trained officers.[197] However, by comparing the percentage of attendance classes, we see the tribal competition (see Figure 18). In 1982, all of the students were from the Fighter tribe. During the first full post-Gulf War year of 1992, this percentage had declined to 46%, with the newly introduced bomber tribe making up 27.4%, and the Delphic tribe 22.2% of the students. By 1999, this shift in tribal representation had increased. Of the

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[196] Years prior to 1992 held three classes per year with 3 1/2 months of instruction; in 1992, class duration increased to 5 1/2 months with only two classes per year. The reduction in students this might naturally cause was made up by larger class sizes and the addition of B-1 and B-52 students. This, and all data for USAFWS attendance, was obtained by personal correspondence with Ms. Annie Taitague, USAFWS Registrar, on 22 August 2000.

[197] It should be noted that many of the non-fighter communities had "elite" advanced tactics schools before their inclusion within the USAF Weapons School umbrella. It was the dissolution of SAC and TAC into ACC in 1992 that led to the consolidation of all these schools under one organization. SAC's Strategic Weapons School at Ellsworth AFB, South Dakota (first activated in 1989) for the Bomber tribe was added to the USAF Weapons School in 1992 when TAC and SAC merged to form ACC. ACC also developed a separate C-130 Combat Aerial Delivery Weapons Instructor Course Division at Little Rock AFB that was closely integrated with the Weapons School at Nellis AFB. This organization was transferred to Air Mobility Command in 1997, but they are now formally affiliated with the Weapons School, and their graduates are given the same recognition as those students of the USAF Weapons School. In 1994, Air Force Space Command created the Space Tactics School at the Space Warfare Center at Falcon AFB. This course was transferred to the USAF Weapons School in 1996.

140 USAFWS students, only 37.1% were from the traditional "fighter community," 17.2% were from the Bomber tribe, 12.1% were of the Mobility tribe, while 32.1% were from the Delphic tribe.
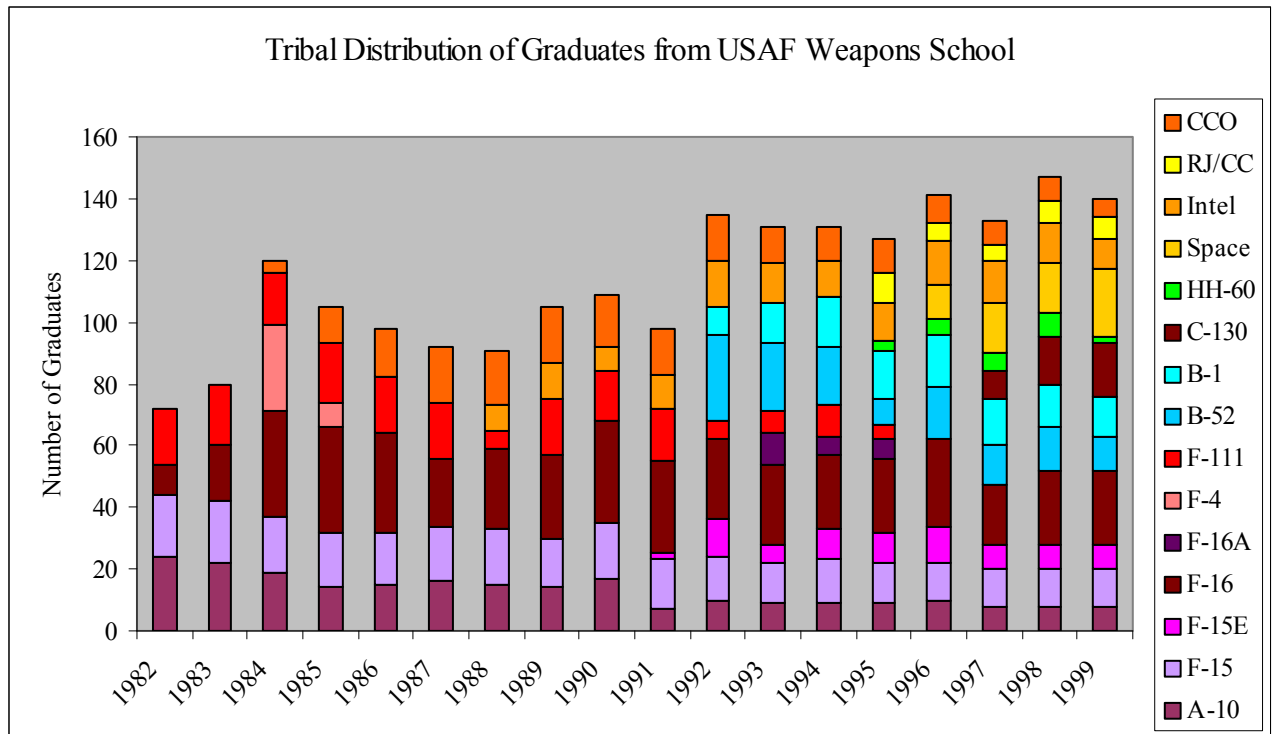
Source: USAF Weapons School graduate data, USAFWS Registrar.

Figure 17. Tribal Distribution of Graduates from USAF Weapons School

Tribal Distribution of USAFWS Graduates
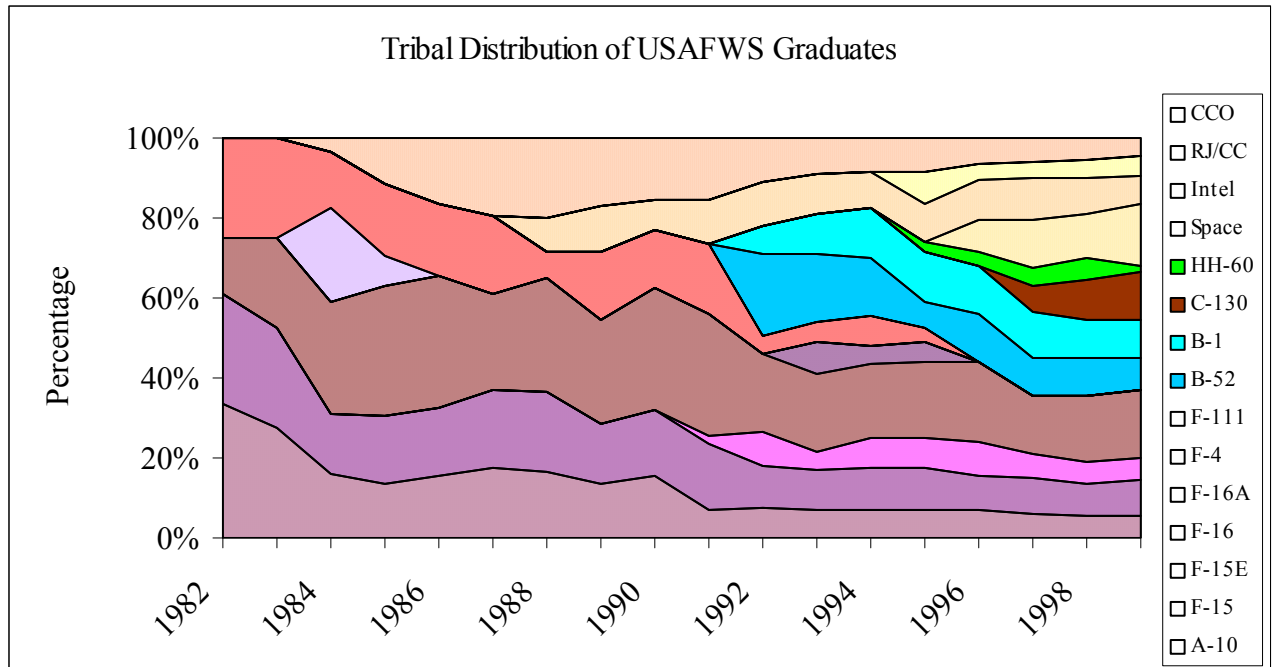
Source: USAF Weapons School graduate data, USAFWS Registrar.

Figure 18. Tribal Distribution of USAFWS Graduates, by Percentage

The number of students sent to each Weapons School division are based upon the wing structure of the Air Force. Thus, if the tribal distribution of combat wings changes significantly, we may expect to see this reflected in the proportion of students from each tribe attending the School. However, attendance also reflects the importance given by the Air Force to the respective weapon systems. Air weapons controllers (the first "non-fliers") began going through the School in 1984, and became their own division in 1987, closely followed by the Intelligence Division in 1990. The first class of HH-60 pilots and RC-135/EC-130H electronic warfare officers were added to the curriculum in 1995, and then space warfare officers were added in 1996 as a signal of the increasing importance of these assets to the Combat Air Forces. Similarly, one may expect students from the E-8 JSTARS, B-2, and F-22 will be added to the curriculum in the years ahead.

Future Implications of USAFWS. Students of the Weapons School are usually captains when they attend, typically at the five to ten year point in their careers. This may suggest that here is the pool from which we will select our future leaders, 15 or 20 years in the future. If so, then we can expect a larger percentage of "patches" to come from other than the traditional Fighter tribe. Most of the current brigadier generals pinned on their star at about the 25-year point in their career. Using 1984 as our starting point, we should begin seeing air weapons controller Weapons School graduates being promoted to brigadier general in 2001.[198] The first Bomber tribe patches will attain O-7 rank by 2009. Graduates of the Space Division, first attending in 1996, may be expected to be promoted to brigadier general by 2016. Mobility tribe officers will reach this rank a year later. If indeed attendance at the Weapons School assists in the promotion potential of an officer, then we can see the "patch effect" being spread over more of our tribes.

Command and Combat Experience

Vance Mitchell, in his study of the Air Force personnel system, claims that previous command is one of the most important discriminators for future senior leadership.[199] Every rated four-star general was both a squadron and wing commander, and almost every lieutenant general was also a wing commander.[200] Of current USAF

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[198] All calculations are based upon a notional captain, attending the respective USAFWS division at eight years into a career, and pinning on their first star at twenty-five years of service.

[199] "Including the other rated in the operations (flying) career field, where by custom and law only pilots could command or hold positions of responsibility, posed a paradox. It meant that, unique in the Air Force, other rated officers were in a career field in which they had no real careers." Vance Mitchell, 345. "In the 1960s, the statistical analyses of promotion results began to break the rated force down into its component parts rather than lumping all those with wings in a rated or operations category. This confirmed what must have already been widely suspected, that navigators had much less opportunity for promotion to colonel, where previous command experience was a definite asset, than either pilots or non-rated officers. The general officer ranks, where command experience was virtually a prerequisite, were almost beyond the reach of even the most talented navigator." Ibid., 350. Although these statements discuss the controversy between pilots and navigators, similar conclusions may be drawn for "other rated" career fields such as air battle managers and space operators.

[200] Of all lieutenant generals, 26 of 40 were squadron commanders, 35 of 40 were wing commanders. FY00.

senior leadership (all three and four-star generals), only seven of the 41 pilots did not command a squadron, and only one of these 41 did not command a wing.[201] Many non-pilots held important positions such as directors of agencies and centers, but few were commanders of "combat units."

Combat experience may also be a factor. All of the rated four-star generals flew in Vietnam (ten of these eleven pilots have Distinguished Flying Crosses), and half of the lieutenant generals (21 of 40) did as well. However, the difference in tour policy for fighter and bomber airmen is apparent in their military records; fighter and some mobility pilots were "assigned" to the Vietnam theater of operations, while bomber and SAC mobility pilots served on temporary duty rotations.[202] The operations in Vietnam certainly created a greater demand for fighter pilots, especially due to combat losses, short combat tours, and the expanded use of fighter aircraft on some missions traditionally conducted by bombers. The number of fighter units in the Vietnam area of operations was expanded, thus increasing the number of fighter pilots required for command positions. Although Worden claims this was a major factor in the fighter tribe's rise to preeminence, it is difficult to determine if bomber and mobility pilots (or fighter pilots, for that matter) *without* Vietnam combat experience were *not* promoted to senior positions because of a lack of such experience.[203] Can the same be said for recent operations, when B-2 bomber crews flew round-robin sorties from Missouri to operations in Kosovo? Or when much of the Delphic and Mobility tribe operated from remote

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[201] Non-pilots in senior leadership often held equivalent positions, such as heads of agencies, or hospitals. One may argue whether these hold the same prestige as a squadron or wing commander.

[202] Strategic Air Command's Vietnam policy sent bomber and tanker crews on multiple six-month temporary duty rotations, while Tactical Air Command's policy was for a single one-year "permanent" assignment to the theater, lasting until fighter pilots has flown 100 combat sorties. Also, SAC crews were predominantly stationed in Guam and Okinawa, considered outside the theater of operations. These temporary duty tours do not show up on assignment records for bomber pilots as they do for fighter pilots. Additional political sensitivities limited the "publicity" of these combat operations, especially in Laos; some of these missions were not allowed to be counted as "combat." Thompson, 1-6, 132-6.

[203] "This greater variety of combat experience provided fighter pilots with a significant advantage over the bomber cohort in competing for future leadership positions in a military that prized combat and command experience." Worden, 190.

stations? Combat sortie counts would also be different when fighter pilots might fly two or three 4-hour sorties in a week, while bomber crews might fly only a single 30-hour mission, or a space operator who would not "fly" any "combat missions."[204]   The definition of "combat experience" may be changing, even though this change might not be reflected in campaign awards.

For much of Air Force history, legislation restricted command of flying units to pilots, specifically Public Law 446 of the 69th Congress (1926) and Public Law 795 of the 76th Congress (1940).[205]   Only in 1953 were "other rated" officers given the opportunity to command support organizations, and command ground-launched missile units in 1956.[206] Change has been slow. Only recently have air battle managers been able to command AWACS squadrons, although they perform the aircraft's mission.[207] Command of a squadron or wing, and "combat experience" that is recognized by officer promotion boards, may very well be critical to selection into the elite cadre. The USAF promotion system is obviously canted toward these factors, and certain tribes benefit from this orientation. However, other than tracking the numbers of USAF wings (cited earlier in this study) there is little trend analysis we can do in this area.

Below Primary Zone Promotions

Promotions below the primary zone (BPZ) can also serve as an indicator of possible selection into the USAF senior leadership; some critics say BPZ promotions are the *most important* indicator.[208]   Data shows that most senior officers were promoted

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[204] Combat sorties being one of the primary criteria for air and aerial achievement medals.

[205] Vance Mitchell, 353.

[206] Ibid., 348.

[207] Air battle managers (with the 13Bxx AFSC) were first authorized to command flying squadrons by an interim change notification 96-1 to Air Force Instruction 51-604 (31 Dec 1996). In October 1999, air battle managers were reclassified as rated officers, thus obviating the need to update the AFI with exceptions to the existing "rated-only" policy for command of a flying squadron.

[208] Lt Col Carl D. Evans discusses factors which have changed the Air Force's "executive development landscape," thus leading the USAF to emphasize BPZ promotion as a quality indicator for selection to the general officer rank. Evans, 37-55.

early at one time or another during their career, and only 71 percent of current Air Force colonels were never promoted below the primary zone.[209] According to AFPC historical data, pilots are promoted BPZ much more often than other occupational categories. When comparing the promotion data from FY89 to FY00, the pilot category was promoted anywhere from 1.1 to 4.0 times more often to the rank of major BPZ than other categories (navigator, non-rated operations, or air battle manager). For lieutenant colonel BPZ promotions, the rate increases in favor of pilots, from 1.2 to 9.8 times the rate of other career fields. For colonel, the rate ranges from 1.7 to 7.8 times the other categories.[210] The number of pilots considered for promotion has always been much greater than those from the other categories, therefore even if the rates are close, the total number promoted has always favored the pilot category. Unfortunately, we cannot separate the tribes from the occupation categories listed in the AFPC data.[211] At best, we can assume those tribes in which pilots predominate (namely those tribes with non-crew weapon systems such as the fighter tribe) might benefit from increased numbers of BPZ promotions. This research, however, will refrain from this assumption, and therefore does not examine the tribal relationships of BPZ promotions.

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[209] AFPC IDEAS data, FY00. There is also a strong correlation between BPZ promotions and wing or group command. The USAF Command Screening Board results provided by AFPC indicate that from 94 to 100 percent of all candidates for wing commander positions (for rated, space and intelligence wings) had at least one BPZ promotion in their career (data ranging from 1997 to 2000). Similarly, BPZ promotion was also prevalent in candidates for group commander positions (in 2000, 90 percent of rated candidates, 100 percent of space, intelligence and information operations candidates, and 88 percent of communications candidates had received BPZ promotions).

[210] There is *only one* exception to the rule that the rate of BPZ promotions favored pilots discovered in all available promotion data since FY89. In the 1991 colonel's promotion board, the BPZ promotion rate of non-rated operations was 5.3%, which exceeded the pilot BPZ promotion rate of 4.4%. But the number of BPZ non-rated operations promotees was only eight (of 151 considered), compared with the 51 pilots (of 1163 considered) that were promoted early that year.

[211] "The Air Force Personnel Center (AFPC) jealously guards promotion rates by career field." Also: "After numerous attempts to obtain specific data from a variety of offices (in both Washington, D.C. and Randolph AFB, TX) the author [Maj McClintock] was told that he would 'never' be allowed to use promotion data for specific career fields for research. When asked how far back such data was considered 'sensitive,' the author was told 'forever.'" McClintock, 57.

Staff Work

Another possible discriminator is based on experience as an aide or executive officer to a senior general officer. According to Janowitz, "the ranking military leaders [of WWII] displayed an early and persistent propensity for staff work; ... future members of the military elite were more often military aides. Almost a third of a sample of the four-star generals of World War II and the subsequent period served as military aides."[212] It is said that generals make future generals. A general, seeking an aide or executive officer, may find it more comfortable working with someone who "speaks his language;" or in other words is a member of his tribe. If the Fighter tribe currently dominates the senior positions of the service, and if senior leaders prefer subordinates of their own tribe, then it stands to reason that the majority of aides and executive officers would likewise be from the Fighter tribe. If indeed experience in these positions enhances a young officer's career (through breadth of experience, networking, successful performance reports, or senior-level mentoring) then tribal preeminence becomes self-perpetuating. While this line of reasoning may have some validity, this study leaves it to future researches to determine the extent of this correlation.

External Factors

The USAF senior leadership do not always get what they want. The cancellation of the B-70 Valkerie program is an example of an administration (Kennedy) overruling the proposals of the senior military representative (General LeMay). Similarly, the development of the advanced manned precision strike system (AMPSS) and advanced manned strategic aircraft (AMSA) [now the B-1] went through many ups and downs with each administration.[213] It was finally acquired by the Reagan Administration during his

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[212] Janowitz, 166.

[213] For a discussion of the trials and tribulations of the B-1 program, see Futrell, vol. 2, 389-427. Roswell L. Gilpatric, after retiring as Deputy Secretary of Defense, proposed phasing out manned bombers

strategic modernization program. Currently, U.S. Senator Bob Smith (R-NH) is demanding the Air Force divert more attention (plus the associated funding and doctrine) toward the development of space systems. "If the Air Force cannot or will not embrace spacepower, we in Congress will have to drag them there, kicking and screaming if necessary, or perhaps establish an entirely new service."[214]   This sort of external input obviously disrupts our impression of the Air Force being a closed system.

External factors can make themselves known in many forms. The president and Congress assign budget priorities, which may have little to do with military effectiveness or doctrine. Some budget decisions may be made for economic/strategic reasons (to keep weapon system lines open) not for military reasons. Special committees may present findings that run contrary to military doctrine (such as the Commission to Assess United States National Security Space Management and Organization).[215] Changes in national policy may make themselves felt first in the area of budget priorities, only to be reflected years later in military doctrine. Presidents also appoint officers to flag rank and senior command positions with the approval of congressional members. This may favor one tribe over others, depending on the personal inclinations of these civilian leaders. If these politicians have an "image" of an Air Force leader as a fighter pilot, this may influence their decisions for appointments. Or politicians may seek to influence the direction of the military by selecting "new blood" to senior leadership positions. In any case, these decisions are beyond the scope of this study of the Air Force as a closed system.

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altogether by 1970. He believed we could rely on a strategic retaliatory force made up of land-based and sea-based missiles to provide nuclear deterrence. Futrell, vol. 2, 124.

[214] Senator Bob Smith (R-NH), "The Future of Space in the Military," speech, 15 May 2000, n.p.; on-line, Internet, 8 February 2001, available from http://www.senate.gov/~smith/Releases/Releases/05152000.htm.

[215] The 2001 Space Commission, chaired by Donald Rumsfeld, was instructed to look at the benefits of a separate space service or a space corps within USAF, the creation of a new office of Assistant Secretary of Defense for Space, and a new apparatus for managing space affairs within the Pentagon. John A. Tirpak, ed., "The Fight For Space," *Air Force Magazine* 83, no. 8 (August 2000). (August 2000): n.p.; on-line, Internet, 8 February 2001, available from http://www.afa.org/magazine/august2000/0800space.html. The Committee's findings will likely have a great impact on Air Force policy toward space, especially as Donald Rumsfeld is now the Secretary of Defense.

Summary of Other Variables

There are many factors, which may contribute to promotion to senior leadership in the Air Force. Commissioning source, advanced degrees, professional military education, Weapons School attendance, command and combat experience, early promotions, and assignments working for flag officers all contribute to an individual's ability to be promoted. Yet when closely examined, some of these variables do not show any significant impact on selection to the elite cadre. Other variables, while admittedly important for promotion, do not favor one tribe over another. A few, namely attendance at the Weapons School, do seem to have measurable impact on selection into the elite cadre. This research has chosen to focus on those measurable variables that show distinctions along tribal lines, such as the budget, doctrine, inventory, and demographics. External factors, such as a changing threat, or pressures from the civilian political leadership, undoubtedly have a great impact on the tribal dynamics of the Air Force. This area could benefit from further research, however it is considered beyond the scope of this current study.

Chapter 7

Conclusion

The bayonet has always been the weapon of the brave and the chief tool of victory.

—Napoleon Bonaparte

The service's purpose is to generate combat capability that protects the country, and not necessarily to provide equal career opportunities for those who fly heavies, or, heaven forbid, don't wear wings at all.

—General Merrill McPeak

General McPeak may have had a point, as he attempted to justify his preference for placing fighter pilots in key Air Force positions.[216] His statement certainly draws attention to the popular metaphor "pointy end of the spear." Indeed, the purpose of the Air Force is to generate combat capability. Yet does this mean the service should always equate combat capability with weapons launched from fighter aircraft? And are representatives of the Fighter tribe always the best officers to lead such a force?

The argument that successful warfighters only come from a certain tribe runs thin, and is certainly not supported by Air Force history. The Air Force has produced many military leaders, from very diverse backgrounds. Most would agree General Horner was able to conduct a successful air campaign in the Gulf War that incorporated every aspect of airpower; he was not limited to only his personal expertise (in fighter aircraft, especially the F-105 in Vietnam). Nor would anyone argue that bomber pilot General Curtis LeMay was anything other than a brilliant operational commander, perhaps the best the Air Force has ever experienced. Likewise, Lieutenant General William Tunner, "the father of airlift," demonstrated great skill in organizing

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[216] "Chief of Staff Gen. Merrill McPeak, sets reporters straight about his widely-reported desire to put fighter pilots in all key positions in the Air Force." "Don't You Forget It," *Aerospace Daily* 160, no. 14 (21 October 1991): 110.

the Hump airlift over the Himalayas during WWII, the Berlin airlift support plan in 1948-49, and Military Air Transport Service (now Air Mobility Command). All three generals applied their personal experiences, and perhaps personal prejudices, to the successful application of airpower. Why, then, does the service seem resistant to other Air Force officers, with other areas of expertise, rising to the most senior ranks? Any organization, dominated by one tribe, takes on the values and culture of that elite group. Yet as the environment changes, the organization may be forced to adapt. Culture, doctrine, and budget priorities may remain stagnant, tied to the successes of the past. The Air Force may discover that General McPeak's point is only the obsolete end of a bayonet.

The New Preeminent Tribe

The next preeminent tribe of the Air Force may be the Delphic tribe. Empirical data shows trends that, in general, favor this tribe over the others. By comparing the trends of our variables, we seem able to predict that the preeminence of this tribe may occur at some point in the near future. Budget priority is currently shared between the Delphic and Fighter tribes. After 26 years of greater funding, the Fighter tribe (General Purpose Forces MFP) was surpassed by spending for Delphic programs (C3I/Space MFP) in FY92. The two tribes have maintained comparable shares of the budget since this time, being approximately the same in the budget for FY01. Major programs such as missile defense, the F-22, and the Joint Strike Fighter will likely tip the balance in the favor of one tribe over the other. If one of these major weapon system programs is chosen at the expense of the other, this will likely indicate the future direction of the Air Force.

Such a decision will presumably be a result of national policy. National policy, based upon the perceived threat facing the United States, seems to be focusing on defense against weapons of mass destruction fired upon the United States from rogue nations using intercontinental ballistic missiles. Missile defense is thus a high priority in the second Bush administration. Counter-terrorism, both with WMD and computer attacks, are also receiving

attention. These priorities, plus a less proactive approach to foreign policy, may indicate a move toward defensive "monitoring" as opposed to proactive intervention. This would favor the Delphic tribe. Likewise, USAF doctrine may reflect this shift in future versions, as Air Force officers incorporate lessons learned from Operation ALLIED FORCE and proposals by such studies as *AF2025* and *New World Vistas*. One might expect to see a greater discussion of space and information superiority in future doctrine, as is already the case in joint doctrine publications. Personnel also favor the Delphic tribe. Officers within this tribe outnumber the other three tribes combined, and it was one of only two tribes to show any increase in numbers from the previous fiscal year.[217]

However, a similar shift cannot be observed when looking at the aircraft inventory. The Fighter tribe dominates in numbers of aircraft, with Mobility aircraft a distant second.[218] Although the absolute numbers of aircraft has steadily declined since FY89, the percentage of aircraft distribution between the tribes has remained rather constant.[219] This may remain the case in future years, as old aircraft are upgraded rather than replaced with new aircraft. The only weapon systems currently produced in any significant numbers are Delphic UAVs and Mobility transport aircraft. Recent acquisition seems to be moving towards the development of newer weapons which are then retrofitted onto existing aircraft.

The number of Air Force wings mirrors the aircraft inventory. The Fighter and Mobility tribes have the most number of USAF wings, yet it is the Delphic and Bomber tribes that have actually shown a slight increase in numbers since FY99. This trend should be a critical indicator, since it is the wing commanders who are the pool from which the senior leadership is drawn. However, the number of wings can be misleading because currently a substantial number of

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[217] For FY00, the Delphic tribe consisted of 13,345 officers (19.4% of the entire USAF officer corps), while the Mobility tribe (6179, 9.0%), Fighter tribe (4421, 6.4%), and Bomber tribe (1780, 2.6%) trailed far behind. The Bomber and Delphic tribes were the only two tribes to show an increase in personnel from FY99.

[218] USAF aircraft inventory for FY99 includes Fighter tribe (1594 aircraft), Mobility (909), Delphic (211) and Bomber (179). It should be noted that not all Delphic assets are counted as aircraft (for example, satellites systems) and are therefore not included in this summation.

[219] Since FY89, the Fighter tribe has maintained a steady 53% to 58% of the aircraft inventory, Mobility (28-34%), Delphic (7-10%) and Bomber (6%).

Fighter and Bomber tribe officers are commanding Delphic wings (specifically the four air-breathing ISR wings). While there is no noticeable difference between tribes with respect to most education criterion, USAF Weapons School attendance is showing an increasing trend in Delphic graduates. As these officers progress in their careers, they may assume the wing commander positions of their own tribe. They may even be given command of the multi-purpose wings that are now largely commanded by fighter pilots. This also would indicate a future shift in senior leadership.

This shift in tribal preeminence may occur soon, as early as 2010 or 2015. The first in an unbroken string of Fighter tribe Chiefs of Staff, General Gabriel, took office 16 years after his tribe's MFP spending surpassed the MFP budget of the Strategic Forces. Similarly, such an occurrence could take place 16 years after the Delphic tribe's MFP first surpassed General Purpose Forces spending in 1992, thus placing the transition in 2008. The first Delphic tribe Weapons School graduates could achieve four-star rank by 2010. The Gulf War generation, with its ready significant experience with space and information operations, also achieves this senior rank by 2015. Pressures from external sources could move this timeframe up (or even delay it).

While the empirical data indicates a future shift in USAF senior leadership, scholarly opinion also allows for this possibility. Carl Builder expects there to be pressure to except a changing emphasis: "It is not inconceivable that the dominant contributions of air power by America over the next several decades could come from airlift, missiles, or space systems."[220] Some senior military leaders also acknowledge this possibility.[221] This transformation of preeminence will likely be difficult, as long-standing worldviews are challenged. Perhaps the

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[220] Carl H. Builder, *Icarus Syndrome*: *The Role of Air Power Theory in the Evolution and Fate of the U. S. Air Force* (New Brunswick, N.J.: Transaction Publishers, 1998), 230.

[221] "An integrated air and space program that combines total battlefield awareness and knowledge with rapid and dependable communications to get information to the decisionmaker or shooter, fully integrated with highly capable, survivable aircraft and a fleet of unmanned aerial vehicles, both with precision munitions, is the wave of the future." Gen Thomas S. Moorman, Jr., "The Challenge of Space beyond 2000," in Alan Stephens, ed., *New Era Security: The RAAF in the Next Twenty-Five Years,* Proceedings of a Conference held by the RAAF, Air Power Studies Center, RAAF Fairbairn, Canberra, Australia, (June 1996), 173. Quoted in Benjamin S. Lambeth, *The Transformation of American Air Power,* (Ithaca, NY: Cornell University Press, 2000), 250.

Air Force can learn some lessons from her sister services who have experienced similar tribal warfare and transitional periods.

Tribes in Other Services

The United States Navy also has preeminent organizational cultures.[222] The "black shoe" navy consists of surface warfare operators manning naval warships to control sea lanes and bombard enemy shores. The "brown shoe" navy is made up of the aviators, centered around the aircraft carrier and focused on protection of the battle group and power projection ashore. The "felt shoe" navy are the submariners, originally focused on maritime interdiction and lately on nuclear deterrence. Preeminence in the Navy typically follows the threat. During the Cold War and the threat of a vast blue-water Soviet navy, the submariners maintained great status; their position has declined substantially with the fall of the Soviet Union and the relaxation of the nuclear threat. As the uses of the military move "inland," power projection plays a greater role for the Navy and aviation and surface-launched Tomahawk land-attack missiles (TLAMs) increases in importance. There are, however, at least two tribes left out in the cold. Both the sealift and minesweeping communities within the Navy have been relatively neglected by the organization. The importance of these two communities could change with increasing drawback from pre-positioned ground forces overseas, and the asymmetric ability for small navies to employ mines to interfere with global trade routes.

For much of the post-WWII period, the Navy has maintained a very balanced condition in its senior leadership with respect to its three primary tribes.[223] Figure 19 indicates there is a

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[222] Paul Mitchell gives a good account of the naval bureaucratic competition between what he calls "service unions" in his article of the surface warfare tribe's influence in developing the Navy's Maritime Strategy in the early 1980s. "The surface warfare union effected a series of force development studies in the 1980s, under the title of *The Revolution at Sea*. The results of this study, the navy's proposed 'Arsenal' ship and 'SC-21' family of surface combatants, may have the effect of upsetting the relationships between the various unions in the next century." "The philosophies brought by military decision makers and advisors to the policy making table are fundamentally shaped by their service careers." Paul T. Mitchell, "Ideas, Interests, and Strategy: Bureaucratic Politics and the United States Navy," *Armed Forces & Society* 25, no. 2 (Winter 1999): 243-65.
[223] "Officers tend to believe that those weapons systems, platforms, tactics, and operations which are familiar, will continue to be important in future conflict." John J. Weltman, "The Short Unhappy Life of the Maritime Strategy,"

long-standing "balance" in operational backgrounds for the senior naval officer, the Chief of Naval Operations.[224] Figure 20 also shows the relative balance of current admirals and vice admirals in the US Navy (3 and 4-star admirals). In his study on bureaucratic cultures, James Wilson claims "the greater balance among rival cultures in the navy than those in the air force suggests that the problem of having multiple cultures can be managed without having one culture win out over another."[225]
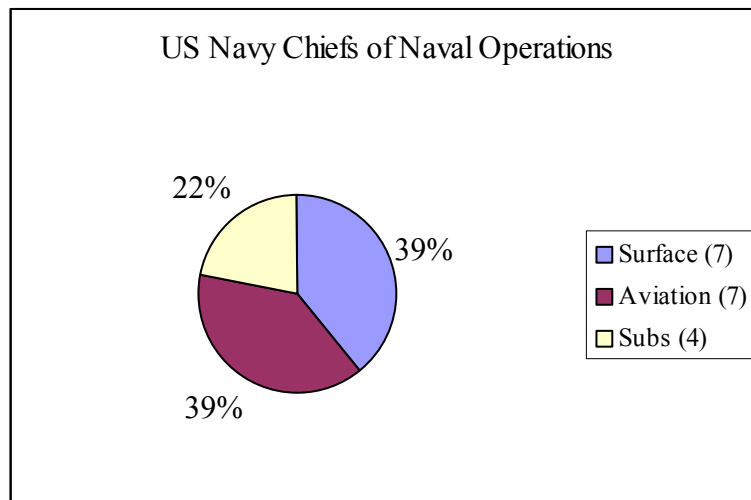
Source: US Navy Biographies website.

Figure 19. Tribal Distribution of US Navy Chiefs of Naval Operations

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The National Interest 15 (Spring 1989): 81. Quoted in Paul Mitchell, 251. "The Navy, like the Air Force, is composed of many factions and interests, sometimes competing and jostling each other to be heard or to get their way within the institution. Unlike the Air Force, however, the Navy has had a clearly defined and declared mission throughout the past 50 (even 100) years, whereas the Air Force seems to have lost touch with its mission during the last 30 years. The wrestling over the leadership of the Navy by the carrier aviators, the submariners, and the surface warfare specialists is appropriate: It is about where the future of the Navy lies and, therefore, whose perspective should *most* influence the future evolution of the Navy." (emphasis in original) Builder, *The Icarus Syndrome,* 226.

[224] The year 1947 is used as the starting point for all data, correlating to the creation of an independent Air Force.

[225] James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* (New York: Basic Books, Inc., 1989), 106.
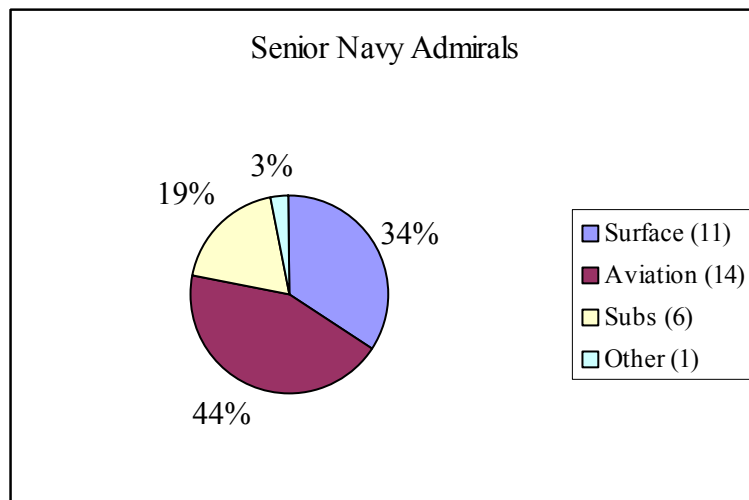
Source: US Navy Biographies website.

Figure 20. Tribal Distribution of Senior Navy Admirals

The United States Army also has five organizational cultures aligned with their five combat branches. The queen of the battlefield, the infantry, has long been the center of the US Army as an organization. However, technological developments and the increasing lethality of modern weaponry have led to other tribes within the Army. The armor/cavalry branch and the artillery branch have also existed for many years. Other additions include the aviation and air defense artillery (ADA) branches. However, these latter combat branches were created in 1987-88, too recent for officers with operational experience in them to reach the rank of senior leadership.[226] Figure 21 shows the operational experience of Army Chiefs of Staff since 1947. This highlights the preeminence of infantry within the Army organizational culture, especially up through World War II. However, when we look at the distribution of Chiefs since 1976 (Figure 22) we see a more even distribution among the combat branches.[227]

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[226] Maj Thomas James, United States Army, interviewed by author, 15 January, 2001. Although the Army's aviator rating has existed for many years, until recently it has not been considered a separate combat branch, so it is difficult to track it as a separate tribe.

[227] The year 1976 marked the last of the World War II generals. The last Army Chief of Staff with World War II experience, Gen Frederick C. Weyand, retired in 1976 to be replaced by Gen Bernard W. Rogers.

US Army Chiefs of Staff

- Infantry (10)
- Artillery (5)
- Armor/Cav (3)
- Generalist (2)
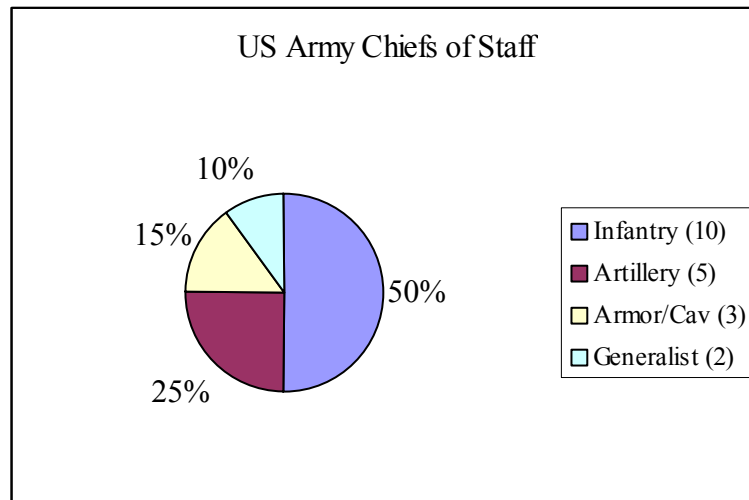
Source: US Army Biographies website.

Figure 21. Tribal Distribution of US Army Chiefs of Staff

US Army Chiefs of Staff, since 1976

- Infantry (3)
- Artillery (2)
- Armor/Cav (2)
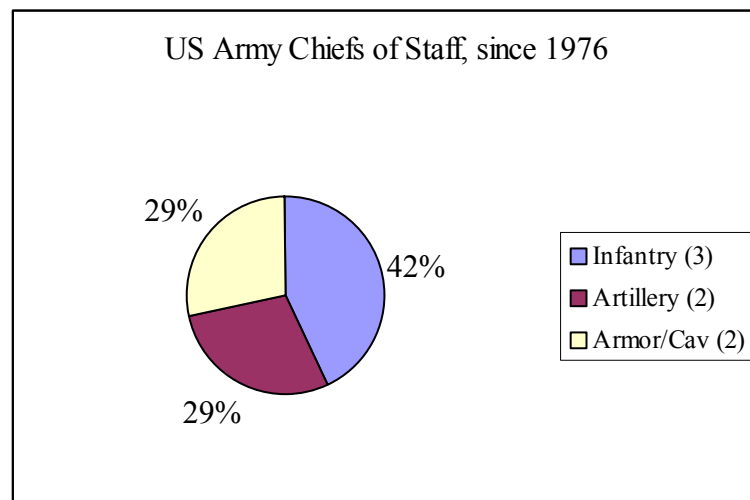
Source: US Army Biographies website.

Figure 22. Tribal Distribution of US Army Chiefs of Staff, since 1976

Although the senior leadership of the Navy and Army seem to demonstrate a greater balance between their tribes, they have dominant cultures different from the Air Force. There is an overwhelming bias when we compare Chiefs and CNOs by their commissioning source (see Figure 23). Of the Army Chiefs of Staff since World War II, 17 of 20 (85%) were graduates of the United States Military Academy at West Point. This is even higher in the Navy, in which 17 of 19 CNOs (89%) attended the Naval Academy.
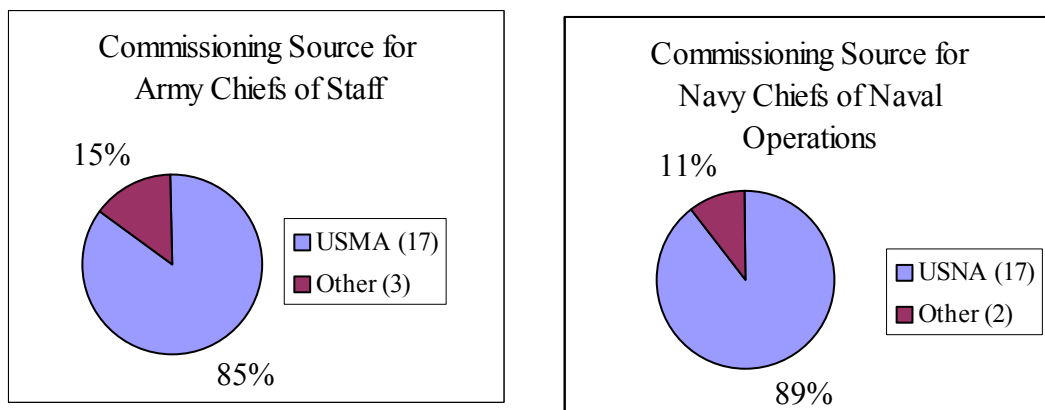
Source: US Army and US Navy Biographies websites.

Figure 23. Commissioning Sources for Army Chiefs and Navy CNOs

The Navy has its own examples of internal tribal warfare and generational conflict. During the late 19th century, the line versus staff officer standoff demonstrated a career occupational division between the "traditional sailors" of the line and the engineers of the new steam ships.[228] This Staff-Line controversy ended in the late 1880s only when both specialties were combined at the Naval Academy into a single career field by requiring line officers to achieve engineering proficiency (thus eliminating future Navy "engineers").[229] Similarly, at this time there was conflict between adherents of sail versus steam technology which, along with a stagnant promotion policy, created a generational confrontation.[230] Such generational battles are common occurrence in the Navy, as new technologies and new threats dictate new tactics.[231] Even today, similar to the Air Force, there is a preeminence within naval aviation favoring the fighter and attack community over the "support" aviation community. Fifty of 68 aviation flag officers (or 74%) come from the fighter and attack aviation squadrons, although they make up only 27% of naval aviation as a whole (see Figure 24).[232] This is even greater when looking at only the senior aviation leadership in which tactical naval aviation makes up 86% of all senior naval aviation leadership in the Navy. Clearly, naval aviation demonstrates the same tribal imbalance as the Air Force.

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[228] Peter Karsten, *The Naval Aristocracy: The Golden Age of Annapolis and the Emergence of Modern American Navalism* (New York: Free Press, 1972), 65-9. "As the Navy became more dependent upon steam engineering for propulsion, the engineer began to insist on higher status--equivalent rank, equal berthing facilities, wardroom privileges, and the like." The line officers resisted this attack on their status. "In 1876 they created a 'line fund' to provide constant support in Washington to lobbyists who defended their command prerogatives against the 'aggressive movement' of the Corps of Engineers." Karsten, 66-7.

[229] Ibid., 67.

[230] "In the 1880s, there began a tug of war between those who identified with the 'old' Navy of sail--generally senior officers--and those who identified with the 'new ideas' and 'new forms' of construction, propulsion, and armaments--generally junior officers." Ibid., 327. For the entire discussion of "sail versus steam" generational confrontation and Captain Alfred Thayer Mahan's role in it, see ibid., 326-47.

[231] "Paradoxically, the 'Young Turks' of the 1880s became the 'Old Guard' of the early twentieth century. When aviation attracted a number of young officers during and after World War I, they met with opposition from battleship-oriented veterans of the appropriations battles of the late nineteenth century." Ibid., 359.

[232] Commander John S. Andrews, "Breaking the Command Barrier." *US Naval Institute Proceedings*, February 2000, 70.

Tribal Distribution of All Current Aviation Admirals

TacAir (50)
Support (18)

26%
74%

Tribal Distribution of 3, 4-Star Current Aviation Admirals

TacAir (12)
Support (2)

14%
86%
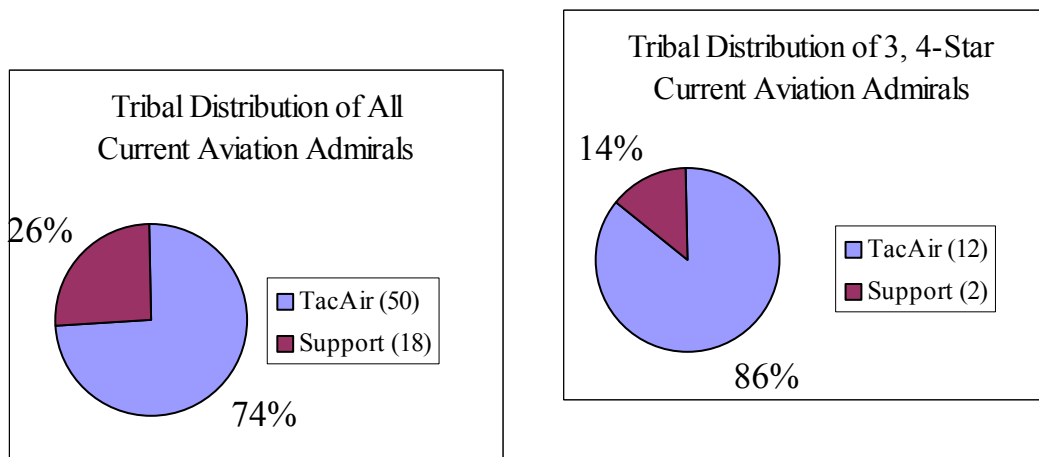
Source: US Navy Biographies website.

Figure 24. Tribal Distribution Among Naval Aviation

USAF Assessment of Worden's Research

In his book *Rise of the Fighter Generals,* Colonel Worden attempts to explain why the current USAF senior leadership is almost entirely represented by the Fighter tribe. He studies it as a transformation, or a changing of the guard from the old tribe of bomber absolutists to a new breed of fighter pragmatists. Worden proposes this transformation occurred primarily because the Fighter tribe benefited from trends of education, career and command opportunities, and a changing international environment that emphasized limited wars. The obvious fact is that current leadership is almost exclusively represented by one small component of the service, out of all proportion to actual USAF personnel numbers, budgets, or even employment doctrine. There must therefore be some explanation, and Worden's proposal is the first to be fielded.

But does anybody buy his argument? Apparently, yes. General John T. Chain, former commander of SAC (and a fighter pilot), is representative of the senior leadership's positive appraisal of Worden's findings. "I applaud Colonel Worden for writing an outstanding book.

"...it should be a must read for serious Air Force officers."[233]   General Chain views this transition from Bomber tribe to Fighter tribe preeminence as "a natural evolution from one to the other without a struggle."   The fact that Worden's book is on the USAF Chief of Staff's Professional Reading List tells us the senior leadership (or at least General Michael Ryan) finds some value in Worden's research. One might assume the current leadership then agrees with Worden's conclusions.

At the same time, it is understandable that some may disagree with the conclusions of this current research, especially those within the existing preeminent tribe. These findings, however, are based upon the same trend lines used by Worden to explain how the Fighter tribe gained preeminence over the Bomber tribe. Yet this research also assumes there are many variables beyond Worden's list that may influence the tribal dynamics within the Air Force. This research addresses some of these additional indicators, while discounting others (or leaves them for further research).[234]   The conclusions drawn from these trends should reflect, as closely as possible, the spirit of Worden's original study. Yet rather than explain the past, this research assumes that if Worden's conclusions of the past transformation are correct, then current data may forecast a future transformation in senior USAF leadership as well.

We must also never forget that individual ability can certainly play an important role in an officer's ability to attain senior rank. The indicators of preeminence from this study do not necessarily assure, or preclude, individual officers from the elite cadre of the Air Force. This research has no intention of being a "primer" for an individual achieving senior rank. Rather, this research has tried to focus, as much as possible, on trends larger than the individual. Thus, the applicability of these findings at the individual level may not be appropriate.

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[233] Gen John T. Chain, "Book Reviews: Rise of the Fighter Generals," *Air Power History Magazine*, Winter 1998, n.p.; on-line, Internet, 3 April 2001, available from http://www.af.mil/lib/csafbook/riseof_chain.html.
[234] Indeed, other researchers may find more convincing variables or indicators that predict a different future.

Not a Done Deal

However much these trends may indicate the probable ascendancy of the Delphic tribe, other events may preclude this occurrence. Delphic tribe officers may never have the opportunity to rise to the senior ranks. According to Stephen Rosen, military innovation requires a favorable environment.

> "Peacetime innovation is dependent at the intellectual level on an assessment of the security environment that leads to a perceived need for innovation which, in turn, leads to new concepts of military operations. At the practical level, it depends on a senior officer or a group of senior officers who first attract officers with solid traditional credentials to the innovation and then make it possible for younger officers to rise to positions of command while pursuing the innovation."[235]

This promotion pathway does not currently exist in the USAF. Without this pathway, there is no mechanism for developing those younger officers who are "learning and practicing the new way of war."[236] Other variables may also negate the ascendancy of the Delphic tribe. Current plans for the advanced USAF fighter aircraft include ISR-type sensors, thus possibly co-opting the role of dedicated ISR systems. Likewise, an increased reliance on UAVs, and the manning of UAV squadrons with officers not of the Delphic tribe, may limits the tribe's influence. A political decision to resist weaponizing space would also have a significant impact on this tribe.

Finally, the makeup of the Delphic tribe itself may preclude it from playing a more dominant role. Critics have worried that space officers do not share a common "warrior culture" across their community.[237] This is also probably true in the intelligence and communications career fields, and surely this is the case within the weather community. The information operations community shares the same disarray for lack of warfighting doctrine as the space

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[235] Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military* (Ithaca, N.Y.: Cornell University Press, 1991), 96.
[236] Ibid., 20.
[237] See the 2001 Space Commission's recommendations on developing a military space culture, 42-45. Individuals ranging from Gen Chuck Horner to Senator Bob Smith have also commented on this lack of a common self-identity.

community. This study has assumed a common tribe to encompass this group, yet little common warrior culture exists. Neither does a unifying "theory of victory" (to use Rosen's concept) bond these disparate groups enough to challenge the established theories.   Although some prognosticators (mostly academics) predict a future battlefield fought with information dominance as much as force application, the concept of "warfighter" has yet to be broadened enough to include the Delphic tribe, at least within the Air Force. It remains to be seen if such a common warrior ethos is required to maintain tribal unity in the face of organizational competition.

Implications

There will always be intraservice "tribal conflict" within the Air Force, as well-intentioned members of different tribes struggle to influence the doctrinal and budgetary direction of their "way of war." The Navy experienced such tribal conflict between line and staff officers in the late 19th century, and also between generations of naval officers struggling for the preeminence of sail versus steam in the late 1800s. The Army saw such a revolutionary change when proponents of mechanized (tank) cavalry supplanted the adherents to horses. Perhaps the greatest tribal conflict was between the new aviation and old army cultures during the 1930s and 1940s, which eventually lead to the separation of this new service from its older parent.

The Air Force should not believe such tribal conflict is new, or dangerous. It should accept the fact that we will have competing interests and ideas, and that the service will continually have tribes struggling for the dominance, if not survival, of their worldview. As new threats to American interests emerge, different tribes will propose different solutions based upon their particular worldviews. New technologies will offer new opportunities to different tribes. Competition can often lead to improved doctrine and better application of technology. Yet we cannot precisely foresee future development, or know exactly where our investments should most appropriately go. The relative preeminence of one tribe or another may shift, depending on internal or external factors, but the healthy and balanced organization will be able to adapt to a

changing environment. An unbalanced, unhealthy organization with the voice of only one tribe in ascendance may not be able to adapt.

The other services seem to show a greater tendency to balance these competing interests. We note in the US Navy and Army of today, the distinctive tribes exist in balance (if not always cordiality). Although advantages may develop temporarily, their doctrine and budget, as well as senior leadership, is relatively distributed amongst the competing tribes. Builder suggests this sense of "togetherness" is due to a shared service vision.[238] It is the Air Force, which Builder says lacks a unifying theory, that suffers from open tribal conflict.[239] And in this environment, only the strong survives to control the senior leadership positions. There is apparently no room for rivals at the top.

Especially in the Air Force's own history, equal tribal balance has been elusive. During World War II, Colonel S. F. Giffen argued that one of the great lessons to be learned from the ongoing war was that fighter aircraft were proving their worth as an offensive weapon in attacking enemy airpower in the air and on the ground. Yet Colonel Giffen, and the role of tactical aviation, was largely ignored by the bomber-minded commanders. "In Washington, during the entire war, there were no high-ranking Air Corps officers who questioned strategic bombing."[240] Likewise, the young space and missile community experienced little support from senior leadership with a narrow vision of the Air Force.[241] Tribal preeminence in the Air Force has not been distributed, as in the other services; its past indicates it is an all or nothing struggle. Do we risk future group mindthink, if our current senior leadership continues to be dominated by a single tribe?

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[238] "In the absence of a unifying cause, the Air Force began to fractionate into factions devoted to missiles, space, and different kinds of airplanes. The aviators, by right of history and seniority, retained control of the institution; but their evident affection for their airplane created a caste and, hence, competition among the factions. What emerged was an institution devoted to disparate means more than to unifying ends..." Ibid., 35.

[239] Ibid., 6-7, 205.

[240] Perry M. Smith, *The Air Force Plans for Peace 1943-1945*, (Baltimore: Johns Hopkins Press, 1970), 23-4. Quoted in Builder, *The Icarus Syndrome*, 127.

[241] "The missile and space advocates, like the aviators before them, had found new means to the old ends of air power, only to find that the institutional leadership was devoted to the old means more than the old ends." Ibid., 34.

This group mindthink of a single dominant tribe can have serious repercussions for the service. It can lead to skewed doctrine: the Vietnam War is often portrayed as a war the Air Force was not prepared to fight because its doctrine was focused on strategic bombing and nuclear deterrence.[242] Similarly, today's USAF doctrine may be skewed to tactical aviation, at the expense of space or information operations. Senior leadership has also lost budget battles, due to differing budget priorities between the Air Force and its civilian leaders. The cancellation of the B-70 bomber program in the early 1960s in favor of intercontinental missiles, much to the disappointment of USAF leadership, may portend a similar situation with the F-22 and Joint Strike Fighter programs vis a vis space systems and UAV development. Even during force employment, target lists for air campaigns may be skewed toward achieving "air superiority" when this may not always be a priority mission if it is at the expense of maintaining space or information superiority. Discordant, possibly "heretical," ideas are not cultivated.[243] Tribes out of favor are taken over by representatives of the dominant tribe.[244] The direction of these tribes may be led by senior leaders who do not share the communal vision of that tribe.[245] It becomes

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[242] Mark Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam,* (New York: Free Press, 1989). See also, Lambeth. "There is the risk that the dominant faction in the last war may persist in leadership positions, not as representing the true future of the institution, but by the inertia of the power acquired." Builder, *The Icarus Syndrome*, 229.

[243] "Charging that the Air Force viewed space essentially as little more than an information medium to be integrated into existing air, land, and sea forces rather than as a new arena for being developed as a mission area in its own right, [Senator Bob] Smith went on to note that he did not see the Air Force 'building the material, cultural, and organizational foundations of a service dedicated to space power.' As evidence, he cited its 'paltry' investments in such areas as space-based missile defense and a spaceplane, its failure to advance more space officers into the most senior general-officer ranks, and its alleged slowness to nurture a cadre of younger officers dedicated exclusively to space warfare." Senator Bob Smith (Republican, N.H.), "The Challenge of Space Power," speech to an annual conference on aerospace power held by the Fletcher School of Law and Diplomacy and the Institute for Foreign Policy Analysis, Cambridge, Mass., November 18, 1998. Quoted in Lambeth, 251.

[244] For example, eight of the ten Commanders in Chief for Air Force Space Command, including the last six CINCs, were fighter pilots in their early careers. AFSC has yet to have a "space officer" or missileer in command.

[245] "Much of the ongoing integration of space with the military operational community can be chalked up to the fact that U.S. Space Command has now had five CINCs in a row whose career maturation occurred primarily in the world of combat flying. There is little question ... that owing to the cumulative influence of Generals Horner, Ashy, Estes, Myers, and Eberhart in uninterrupted succession, a change of major note has been registered in both the orientation and the outlook of the military space community ... with former fighter pilots in senior leadership positions setting both the tone and the example, no doubt to a mixed and still-uncertain reaction from some of the more tenured individuals in the space career field, who may privately wonder whether the apparent seizure of military space by these interlopers wearing wings has altogether been a welcome development." Lambeth, 241.

a struggle: do the senior leaders change the culture of the tribe, or does the tribe eventually produce its own senior leadership to represent its own worldview? Unbalanced tribal dominance thus breeds discontent among the remaining tribes; "such self-serving elitism sows the seeds of discontent among those whose contributions to mission have been denigrated and who have been excluded from any hope of leadership."[246]

Change will come; it always does. Change may be imposed from outside the service. One of the 2001 Space Commission's recommendations to the Secretary of Defense was to impose a change in the selection process for senior space leaders, allowing Delphic tribe officers to compete more favorably with officers of the other tribes.[247] Or the Air Force may elect to control its own destiny by allowing the interplay of the various tribes to produce an evolving organizational vision. US Navy Captain John Bodnar believes such institutional, cultural change occurs very slowly.[248] "I suggest that the armed forces of the Information Age cannot change faster than the people in those forces can be educated or re-educated to utilize the new technology in new organizations and cultures."[249] Thus organizational change occurs on a generational time scale.

Tribal conflict can be healthy. However, *too* much tribal conflict can be fatal to an organization, and unacceptable in a military institution upon which the defense of the nation

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[246] Builder, *The Icarus Syndrome*, 227.

[247] "The Secretary of Defense should end the practice of assigning only Air Force flight-rated officers to the position of CINCSPACE and CINCNORAD to ensure that an officer from any Service with an understanding of combat and space could be assigned to this position." 2001 Space Commission, xxxiii.

[248] While examining the slow racial integration in the U.S. Naval Academy, Captain Bodnar describes four stages of a process that must occur prior to any organizational change: "First comes a stonewall where the senior leadership cannot accept the new values and attempts to stop or subvert the process. The next two stages can come in either order: leveling the playing field so that any individual of the minority attains an equal footing, and gaining a representative share where the minority as a while has access to majority organization. Finally, there is a percolation state in which the prior changes take at least another generation to bring to fruition. In each of these stages we must keep close watch on the generations because the initial stonewalling and gaining a representative share depend mainly on senior leadership, while leveling the playing field and percolation come from the bottom up with the new blood." John W. Bodnar, "How Long Does it Take to Change a Culture? Integration at the U.S. Naval Academy," *Armed Forces & Society* 25, no. 2 (Winter 1999), 289-306.

[249] "We must remember that the admirals of today are instituting policy based on their background at the Naval Academy over two decades ago--when 'high tech' was a slide rule, midshipmen marched to mandatory chapel, and the women in the Yard were only wives or girlfriends." Ibid., 303.

depends. Based upon the empirical data of this study, the Delphic tribe is in the ascendancy. Senior USAF leadership will eventually reflect this shift, with more Delphic officers taking senior flag officer rank. However, there is still a question of how much shift in power should occur. Benjamin Lambeth, in *The Transformation of Air Power,* makes this observation: "In tomorrow's air and space community, combat aviators will increasingly find themselves sharing the operator spotlight with UAV pilots, space controllers, and information warriors, all of whom will be bona fide trigger pullers with a common operational-level responsibility and outlook."[250] While an interesting opinion, especially from such an enthusiastic supporter of the Fighter tribe, the most important term in this statement is the use of the term "sharing." History indicates that the USAF, as an institution, tends to become dominated by a single tribe at any one time rather than maintaining the competitive balance found in its sister services. This may not be the healthy approach. For an organization to be prepared to adapt to a changing environment, it would be preferable to have tribal balance, not dominance, be the norm.

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[250] Lambeth, 253.

Glossary

ABIDES	Automated Budget Interactive Data Environment System
ACC	Air Combat Command
ACSC	Air Command and Staff College
ADA	air defense artillery
AEF	Air Expeditionary Force
AEW&C	airborne early warning and control system
AFDD	Air Force Doctrine Document
AFM	Air Force Manual
AFPC	Air Force Personnel Center
AFSC	Air Force Specialty Code
AWACS	airborne warning and control system
AWC	Air War College
BPZ	below the primary zone
C3I	command, control, communications, intelligence
CAS	close air support
CINC	commander in chief
CNO	Chief of Naval Operations
CSAR	combat search and rescue
DG	distinguished graduates
DoD	Department of Defense
EELV	Evolved Expendable Launch Vehicle
FM	Field Manual
FY	fiscal year
GNP	Gross National Product
IADS	integrated air defense system
ICBM	intercontinental ballistic missile
IDEAS	Interactive Demographics Analysis System
ISR	intelligence, surveillance and reconnaissance
JDAM	joint direct-attack munitions
JSF	Joint Strike Fighter
JSTARS	Joint Surveillance, Target Attack Radar System
JTIDS	Joint Tactical Information Distribution System
MAJCOM	major command

MFP	Major Force Program
MOOTW	military operations other than war
NAF	numbered air force
NATO	North Atlantic Treaty Organization
NWC	National War College
OODA	observe-orient-decide-act
OTS	Officer Training School
PME	professional military education
ROTC	Reserve Officers Training Corps
RDJTF	Rapid Deployment Joint Task Force
SAC	Strategic Air Command
SBIRS	Space-Based Infrared System
TAC	Tactical Air Command
TLAM	Tomahawk land-attack missile
TOA	Total Obligation Authority
TRADOC	Training and Doctrine Center
UAV	unmanned aerial vehicle
UCAV	uninhabited combat air vehicle
USAF	United States Air Force
USAFWS	United States Air Force Weapons School
WD	War Department
WDTR	War Department Training Regulation
WG	wing
WMD	weapons of mass destruction

Appendix A

USAF TOTAL OBLIGATION AUTHORITY
MAJOR FORCE PROGRAM SPENDING
(in FY01 constant dollars, $billions)

Source: Automated Budget Interactive Data Environment System

	MFP 1. Strat Forces	MFP 2. Gen Purpose Forces	MFP 3. C3I/Space	MFP 4. Mobility
FY62	51	18	12	6
FY63	47	20	13	6
FY64	39	18	16	7
FY65	32	20	15	9
FY66	29	31	16	12
FY67	27	31	17	13
FY68	27	32	17	14
FY69	28	30	17	12
FY70	20	25	15	11
FY71	19	22	13	7
FY72	19	20	12	6
FY73	17	20	11	4
FY74	15	19	11	3
FY75	14	18	10	3
FY76	14	20	10	4
FY77	14	21	10	5
FY78	12	24	10	4
FY79	12	23	9	4
FY80	13	23	5	5
FY81	14	27	6	6
FY82	19	31	7	7
FY83	22	30	7	7
FY84	30	31	8	8
FY85	31	36	9	9
FY86	26	35	10	10
FY87	21	34	9	9
FY88	18	30	6	6
FY89	19	30	6	6
FY90	16	27	7	7
FY91	15	26	6	6
FY92	13	21	7	7
FY93	10	19	8	8
FY94	6	18	9	9
FY95	5	18	9	9
FY96	5	18	9	9
FY97	4	17	9	9
FY98	5	17	9	9
FY99	4	19	11	11
FY00	4	19	10	10
FY01	4	21	10	10

Appendix B

USAF WING FORCE STRUCTURE, ACTIVE DUTY
Source: Air Force Historical Research Agency

	Fighter	Bomber	Airlift	Air Refueling	Recon	Space, Missile
1970	35	28	22	3	13	13
1971	31	27	19	2	12	12
1972	32	25	17	2	12	12
1973	34	25	16	2	10	12
1974	33	22	16	5	8	10
1975	33	21	16	3	7	11
1976	34	21	15	3	7	13
1977	33	19	15	4	7	11
1978	34	19	16	7	6	11
1979	38	20	18	7	7	12
1980	39	20	20	6	7	12
1981	36	21	20	6	6	13
1982	38	18	20	9	7	14
1983	35	17	22	7	7	17
1984	37	17	20	9	7	14
1985	35	17	20	7	6	18
1986	37	17	20	9	6	16
1987	41	17	21	7	7	17
1988	37	19	19	7	6	17
1989	36	17	19	9	7	15
1990	36	16	19	8	6	16
1991	34	16	19	6	4	14
1992	25	12	16	6	1	13
1993	21	11	15	7	4	11
1994	17	7	12	8	1	11
1995	18	4	10	7	1	8
1996	18	4	10	6	1	8
1997	19	5	12	6	1	9
1998	18	5	12	6	1	8
1999	19	3	12	6	1	7

Appendix C

USAF TRIBAL DISTRIBUTION BY GRADE
Source: USAF Biographies website

Figure C-1. Tribal Distribution by Grade
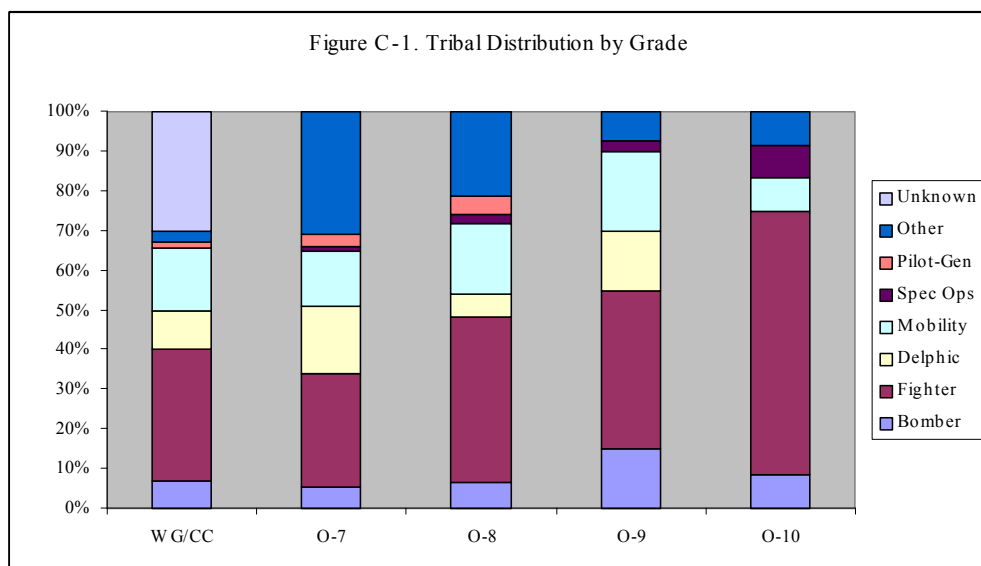
Note: Author was unable to obtain career information on 21 wing commanders at time of study (the official USAF biographies website only posts information for general officers). This is a statistically significant number, and may alter findings.

Appendix D

USAF PERSONNEL RECORDS

Source: Interactive Demographics Analysis System,
Air Force Personnel Center

	USAF Personnel (Officers)
FY94	80708
FY96	76113
FY98	71618
FY00	68752

Bomber Tribe

	Bomber, pilot (11Bxx)	Bomber, nav (12Bxx)	Total	% of total USAF officers
FY94	1024	1205	2229	2.8%
FY96	918	1037	1955	2.6%
FY98	782	954	1736	2.4%
FY00	767	1013	1780	2.6%

Fighter Tribe

	Fighter, pilot (11Fxx)	Fighter, nav (12Fxx)	Total	% of total USAF officers
FY94	4557	1101	5658	7.0%
FY96	4453	966	5419	7.1%
FY98	4163	874	5037	7.0%
FY00	3676	745	4421	6.4%

Delphic Tribe

	Delphic, pilot (11Rxx)	Delphic, nav (12Rxx)	Delphic, ABM (13Bxx)	Delphic, Space (13Sxx)	Delphic, Intel (14Nxx)	Delphic, Wx (15Wxx)	Delphic, C4I (33Sxx)	Total	% of total USAF officers
FY94	717	655	3069	3353	2832	898	4699	16223	20.1%
FY96	756	727	2406	3272	2853	780	4367	15161	19.9%
FY98	689	715	1190	3085	2778	705	4374	13536	18.9%
FY00	712	784	1310	3048	2711	699	4081	13345	19.4%

Mobility Tribe

	Airlift, pilot (11Axx)	A/R, pilot (11Txx)	Airlift, nav (12Axx)	A/R, nav (12Txx)	Total	% of total USAF officers
FY94	4478	1901	994	638	8011	10.0%
FY96	4168	2004	826	586	7584	10.0%
FY98	3739	1719	805	422	6787	9.5%
FY00	3739	1541	805	422	6176	9.0%

Figure D-1. USAF Personnel, by Tribe
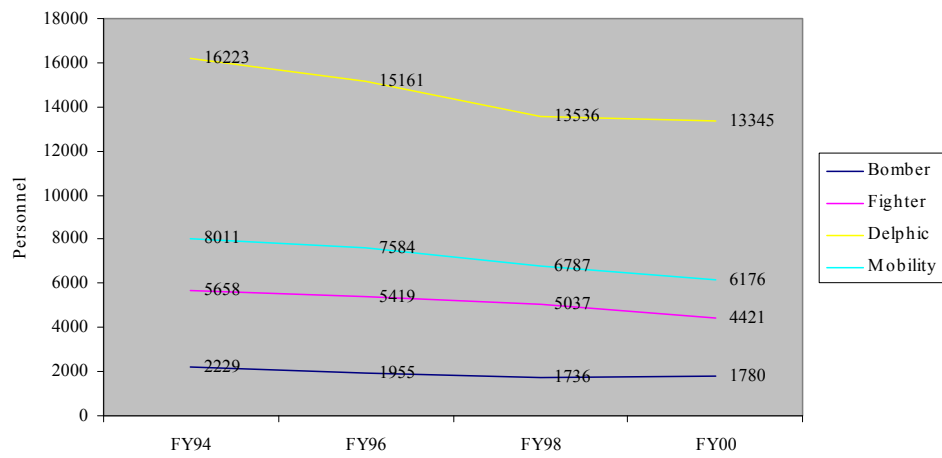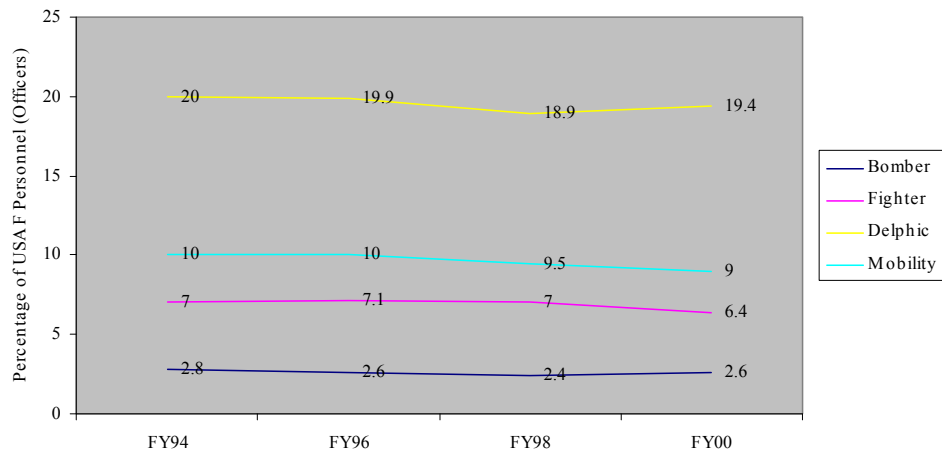

Figure D-2. USAF Personnel, by Tribe (%)

Appendix E

BACKGROUNDS OF AIR FORCE SENIOR LEADERS
1960

Air Staff

Bombers

Chairman of Joint Chiefs of Staff	Nathan F. Twining
Chief of Staff	Gen Thomas D. White
Vice Chief of Staff	Gen Curtis E. LeMay
Assistant Vice Chief of Staff	Maj Gen Richard M. Montgomery
Deputy Chief of Staff, Development	Lt Gen Roscoe C. Wilson
Deputy Chief of Staff, Personnel	Lt Gen Truman H. Landon
Deputy Chief of Staff, Plans and Programs	Lt Gen John K. Gerhart
Assistant Chief of Staff, Intelligence	Maj Gen James H. Walsh
Assistant Chief of Staff, Reserve Forces	Maj Gen Robert E. L. Eaton
Comptroller of the Air Force	Lt Gen William D. Eckert
Office of the Legislative Liaison	Maj Gen Thomas C. Musgrave, Jr.

Fighters

Deputy Chief of Staff Material	Lt Gen Mark E. Bradley, Jr.
Deputy Chief of Staff Operations	Lt Gen Dean C. Strother

Nonrated (nonfliers)

Inspector General	Lt Gen Joseph F. Carroll
Judge Advocate General	Maj Gen Albert M. Kuhfeld
Surgeon General	Maj Gen Oliver K. Niess
Assistant Chief of Staff for Guided Missiles	Brig Gen Milton B. Adams

Commanders

Bombers

North American Air Defense Command CINC	Laurence S. Kuter
Alaskan Air Command CINC	Lt Gen Frank A. Armstrong, Jr.
Air Defense Command	Lt Gen Joseph H. Atkinson
Air Training Command	Lt Gen James E. Briggs
Air Research and Development Command	Lt Gen Bernard A. Schriever
Air Material Command	Gen Samuel E. Anderson
Military Air Transport Service	Lt Gen Joe W. Kelly, Jr.
Headquarters Command	Maj Gen Brooke E. Allen
Alaskan Air Command	Maj Gen Conrad F. Necrason
Caribbean Air Command	Maj Gen Leland S. Stranathan
Air University	Lt Gen Walter E. Todd
USAF Security Service	Maj Gen Millard Lewis
Strategic Air Command	Gen Thomas S. Power
Pacific Air Forces CINC	Gen Emmett O'Donnell, Jr.
Continental Air Command	Lt Gen William E. Hall

Fighters

US Air Forces in Europe CINC   Gen Frederic H. Smith, Jr.
Tactical Air Command   Gen Frank F. Everest

Generalists

Supreme Allied Commander Europe   Gen Lauris Norstad

Air Staff

Bombers

Chief of Staff	Gen David C. Jones
Vice Chief of Staff	Gen William V. McBride
Assistant Vice Chief of Staff	Lt Gen Marion L. Boswell
Deputy Chief of Staff, Programs and Resources	Lt Gen James A. Hill
Deputy Chief of Staff, Plans and Operations	Lt Gen John W. Pauly
Deputy Chief of Staff, Systems and Logistics	Lt Gen Robert E. Halls
Assistant Chief of Staff, Intelligence	Maj Gen George J. Keegan, Jr.
Judge Advocate General	Maj Gen Harold R. Vague
Comptroller of the Air Force	Lt Gen Charles E. Buckingham

Fighters

Deputy Chief of Staff, Personnel	Lt Gen Kenneth L. Tallman
Deputy Chief of Staff, Research and Development	Lt Gen Alton D. Slay
Office of the Legislative Liaison	Maj Gen Ralph J. Maglione
Office of Information	Maj Gen Guy E. Hairston, Jr.

Generalists

Chairman of Joint Chiefs of Staff	Gen George S. Brown
Director of the Air National Guard	Maj Gen John J. Pesch

Airlift

Chief of Air Force Reserve	Maj Gen William Lyon
Chief of Security Police	Mah Gen Thomas M. Sadler

Nonrated (nonfliers)

Inspector General	Lt Gen Donald G. Nunn
Chief of Air Force Chaplains	Maj Gen Henry J. Meade
Surgeon General	Lt Gen George E. Schafer
Assistant Chief of Staff, Studies and Analysis	Brig Gen Jasper A. Welch, Jr.

Commanders

Bombers

Military Airlift Command	Gen Paul K. Carlton
Strategic Air Command	Gen Russell E. Dougherty
Air Force Communications Service	Maj Gen Rupert H. Burris
Chief of Staff, SHAPE	Gen Louis T. Seith
Deputy CINC, US European Command	Gen Robert E. Huyser

Fighters

US Air Forces Southern Command	Maj Gen James M. Breedlove
Tactical Air Command	Gen Robert J. Dixon
Aerospace Defense Command	Gen Daniel James, Jr.
Air Force Logistics Command	Gen F. Michael Rogers
Air Training Command	Lt Gen John W. Roberts
Alaskan Air Command	Lt Gen James E. Hill
USAF Security Service	Maj Gen Kenneth D. Burns
Air University	Lt Gen Raymond B. Furlong
Headquarters Command, USAF	Brig Gen William C. Norris
USAF Academy	Lt Gen James R. Allen

Generalists

CINC US Air Forces Europe   Gen Richard H. Ellis
Pacific Air Forces   Gen Louis L. Wilson, Jr.

Backgrounds of Air Force Senior Leaders
1982

Air Staff

Bombers

Fighters
Chief of Staff	Gen Charles A. Gabriel
Assistant Vice Chief of Staff	Lt Gen Hans H. Driessnach
Comptroller of the Air Force	George M. Browning, Jr.
Deputy Chief of Staff, Plans and Operations	Lt Gen John T. Chain, Jr.
Deputy Chief of Staff, Logistics and Engineering	Lt Gen Richard E. Merkling
Inspector General	Lt Gen Howard W. Leaf
Chief, Air Force Reserve	Maj Gen Sloan R. Gill
Chief, Air National Guard	Maj Gen John B. Conway

Airlift
Deputy Chief of Staff for Manpower and Personnel	Lt Gen Andrew P. Iosue

Generalists
Deputy Chief of Staff, Research, Development and Acquisition	Lt Gen Kelly H. Burke
Vice Chief of Staff	Gen Jerome F. O'Malley

Nonrated (nonfliers)
Deputy Chief of Staff, Programs and Resources	Lt Gen Charles C. Blanton

Commanders

Bombers
Air Training Command	Gen Thomas M. Ryan, Jr.
Air Force Logistics Command	Gen James P. Mullins
Strategic Air Command	Gen Bennie L. Davis
Chief of Staff, SHAPE	General Lawson
Air Force Communications Command	Maj Gen Robert F. McCarthy

Fighters
US Air Forces in Europe	Gen Billy M. Minter
Tactical Air Command	Gen Wilbur L. Creech
Pacific Air Command	Lt Gen Arnold W. Braswell
Air University	Lt Gen Charles G. Cleveland
USAF Academy	Lt Gen Robert E. Kelly
Military Airlift Command	Gen James R. Allen
Air Force Space Command	James V. Hartinger
Deputy Commander in Chief, US European Command	Gen W. Y. Smith
Electronic Security Command	Maj Gen Doyle E. Larson

Airlift

Generalists

Nonrated (nonfliers)
Air Force Systems Command	Gen Robert T. Marsh

Backgrounds of Air Force Senior Leaders
1990

Air Staff

Bombers
Office of Legislative Liaison	Brig Gen Brett M. Dula
Assistant Vice Chief of Staff	Lt Gen Carl R. Smith

Fighters
Vice Chairman JCS	Gen Robert Herres
Chief of Staff	Gen Michael J. Dugan
Vice Chief of Staff	Gen John Michael Loh
Director of the National Guard	Maj Gen Phillip G. Killey
Inspector General	Lt Gen Bradley C. Hosmer
Assistant Chief of Staff, Studies and Analyses	Maj Gen George B. Harrison
Chief of the Air Force Reserve	Maj Gen Roger P. Schemer
Deputy Chief of Staff, Programs and Resources	Lt Gen Robert L. Rutherford
Deputy Chief of Staff, Personnel	Lt Gen Thomas J. Hickey
Deputy Chief of Staff, Logistics and Engineering	Lt Gen Henry Viccellio, Jr.
Deputy Assistant to Secretary of Air Force for Acquisition	Lt Gen John E. Jaquish
Deputy Chief of Staff, Plans and Operations	Lt Gen Jimmie Adams

Airlift

Generalists

Nonrated (nonfliers)

Commanders

Bombers
Military Airlift Command	Gen H. T. Johnson
Air Force Logistics Command	Gen Charles C. McDonald
Chief of Staff, SHAPE	Gen John A. Shaud

Fighters
US Air Forces in Europe	Gen Robert C. Oaks
Tactical Air Command	Gen Robert D. Russ
Strategic Air Command	Gen John T. Chain, Jr.
Air Training Command	Lt Gen Joseph W. Ashy
Pacific Air Command	Gen Merrill A. McPeak
Air University	Lt Gen Charles G. Boyd
USAF Academy	Lt Gen Charles R. Hamm
Air Force Systems Command	Gen Ronald W. Yates

Airlift
Air Force Special Operations Command	Maj Gen Thomas E. Eggers

Generalists
CINC North American Aerospace Defense Command	Gen Donald J. Kutyna
Deputy Commander in Chief, US European Command	Gen James P. McCarthy

Nonrated (nonfliers)
Air Force Communications Command	Maj Gen Robert H. Ludwig
Air Force Space Command	Lt Gen Thomas S. Moorman, Jr.
Electronic Security Command	Maj Gen Gary W. O'Shaughnessy

**Backgrounds of Air Force Senior Leaders
2000**

Air Staff

Bombers

Fighters
Vice Chairman JCS   Gen Richard B. Meyers
Chief of Staff   Gen Michael E. Ryan
Director, Air National Guard   Maj Gen Paul A. Weaver, Jr.
Inspector General   Lt Gen Raymond P. Huot
Air and Space Operations   Lt Gen Marvin R. Esmond
Personnel   Lt Gen Donald L. Peterson
Plans and Programs   Lt Gen Joseph H. Wehrle, Jr.
Office of Legislative Liaison   Maj Gen T. Michael Moseley
Safety   Maj Gen Francis C. Gideon, Jr.

Mobility/Spec Ops
Vice Chief of Staff   Gen John W. Handy
Assistant Vice Chief of Staff   Lt Gen William J. Begert
Chief, Air Force Reserve   Maj Gen James E. Sherrard, III

Delphics
Communications and Information   Lt Gen John L. Woodward, Jr.

Nonrated (nonfliers)
Installations and Logistics   Lt Gen Michael E. Zettler
Chief of Chaplains   Maj Gen William J. Dendinger
Judge Advocate General   Maj Gen William A. Moorman
Surgeon General   Lt Gen Paul K. Carlton, Jr.
Public Affairs   Brig Gen Ronald T. Rand

Commanders

Bombers
Air Mobility Command   Gen Charles T. Robertson, Jr.

Fighters
Supreme Allied Commander Europe Gen Joseph W. Ralston
US Air Forces in Europe   Gen Gregory S. Martin
Air Combat Command   Gen John P. Jumper
Air Education and Training Command Gen Hal M. Hornburg
Pacific Air Command   Gen Patrick K. Gamble
USAF Academy   Lt Gen John R. Dallager
Air Force Space Command   Gen Ralph E. Eberhart
Air Force Reserve Command   Maj Gen James E. Sherrard, III
Air Force Materiel Command   Gen Lester L. Lyles

Mobility/Spec Ops
Air Force Special Operations Command Lt Gen Maxwell C. Bailey

Generalists

Nonrated (nonfliers)

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